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THE
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A MONTHLY RECORD OF THE

PROGRESS OF MEDICAL AND SURGICAL SCIENCE.

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INDEX TO VOL. XXV.

Page.

Abdominal and Pelvic Tumours, Curiosities in 804
Abdominal Section for Rare Conditions 262
Abdominal Typhus, Ocular Symptoms in 659
Abdominal Viscera from Corset-Wearing, The Changes in 967
Abscesses of the Liver, Multiple 100
Achillo-Bursitis Anterior 991
Acne Vulgaris, Etiology and Treatment of 266
ADAMI, Dr. J. G.:
  Dissecting Aneurysms 23
  The Centenary of Vaccination 81
  Multiple Abscesses in Liver 100
  Foaming Liver 115
  Aneurysm of the Ascending Aorta.... 386
  On Retroperitoneal and Perirenal Lipomata 529 620
  The Doctrine of the Internal Secretory Activity of Glands 856
Address in Medicine 168
Address in Surgery 182
Address, President's 161
Aikins, Dr. W. A 996
Air Embolism in Placenta Prævia 564
Albinism 945
Albuminuria, Discussion on 146
Albuminuria by Renipuncture, the Treatment of 646
Albuminuric Women Nurse their Children? Should 816
Ambulatory Lobar Pneumonia 551 590
Ambulatory Treatment of Fractures... 957
American Government and Canadian Nurses, The 519
American Public Health Assoc., The... 79
Amniotic Infection after Rupture of the Membranes 814
Amyloid Degeneration 60
Anæmia, Discussion on 316
Anæmia, The Treatment of 460
Anæsthesia and its Dangers, On 899
Aneurysms, Arrested Dissecting 23
Aneurysm of the Ascending Aorta.. 386 488
Angina Pectoria, Treatment of 809
An International Catalogue 597
Antitoxin in Diphtheria, Report on 1
Antitoxin, Collective Investigation 363
Aorta, Aneurysm of the Ascending .. 386 488
Appendicitis 897
Appendicitis, Method of Operating in .. 54
Appendicitis with Three Relapses, A Case of 455
ARCHIBALD, Dr. E. W.:
  On Hæmorrhagic Cysts of the Thyroid 780
Argentamin in Eye Diseases 660
ARGUE, Dr. J. F.:
  A Case of So-called Acute Hodgkin's Disease 310

Page.

ARMSTRONG, GEO. E.:
  Clinical Lecture—Renal Calculus 553
  Perforating Typhoid Ulcer 601
Arsenical Paralysis 125
Arthritis in Children, Chronic 94 97
Ataxia, Cerebellar 72
Ataxia, The Eye in Hereditary 908
Atrophy in Cerebral Disease, Early 208

Bacillus Aërogenes Capsulatus, Infection by 119 155
Bad Eye Factory, The 910
Baker, Wm. Morrant 440
Ball Thrombus—Mitral Stenosis 729
BELL, Dr. JAMES:
  A Large Mouth Concretion 789
  Renal and Vesical Calculi 791
  An Extreme Case of Talipes Equinus 793
  Three cases of Carcinoma of the Middle and Upper portions of the Rectum .. 929
Belladonna Ointment, Poisoning by 486
BIRKETT, Dr. H. S.:
  Valedictory Address 849
Bladder, Primary Cancer of 73
Board of Health of the Prov. of Quebec, Annual Report of 743
BOOK REVIEWS:
  The American Text-Book of Medicine and Surgery. 66
  A Treatise on the Medical and Surgical Diseases of Infancy and Childhood 66
  A Manual of the Practice of Medicine 67
  Ruhmkorf Induction Coils, their Construction, Operation and Application 67
  A Hand-Book of Medical Diagnosis... 67
  An Introduction to Pathology and Morbid Anatomy 68
  The Toxic Amblyopias 68
  Researches into the Anatomy and Pathology of the Eye. 144
  Manual of Anatomy 144
  In Sickness and in Health 145
  Archives of Clinical Skiagraphy 341
  A Manual of Obstetrics 341
  McGill Obstetric Note Book 341
  System of Surgery 342
  Practical Points in Nursing, for Nurses in Private Practice 343
  The American Academy of Railway Surgeons 344
  Minor Surgery and Bandaging 344
  The Pharmacopœia of the Montreal Dispensary 344
  Prize Essays on Leprosy 421
  Physics for Students of Medicine 422
  The Student's Medical Dictionary 422
  Hydro-Electric Methods in Medicine .. 423
  The Physicians' Visiting List 423

PAGE.

Book Reviews—*Continued.*
  Affections Chirurgicales du Tronc 178
  Deformities: A Treatise on Orthopædic Surgery 178
  Opththalmic Operations as Practised on Animal's Eyes 179
  A Manual of Clinical Diagnosis 180
  A Practical Treatise on Materia Medica and Therapeutics 181
  An American Text Book of Applied Therapeutics 181
  A Practical Treatise on Medical Diagnosis 585
  Rough Notes on Remedies 662
  An American Text-Book of Physiology 662
  A Treatise on Surgery 663
  Royal Infirmary Clinics 663
  Food in Health and Disease 746
  Current from the Main 746
  A Handbook of Surface Anatomy and Landmarks 746
  Voice Building and Tone Placing 747
  The Principles of Theoretical Chemistry with Special references to the Constitution of Chemical Compounds 747
  The Practice of Medicine 820
  Anomalies and Curiosities of Medicine 821
  Lectures on Renal and Urinary Diseases 822
  Practical Diagnosis: The Use of Symptoms in the Diagnosis of Disease 823
  Autscopy of the Larynx and Trachea 823
  Transactions of the American Ophthalmological Society 824
  The Nursing World Bed-Side Record 824
  Transactions of the Medical and Chirurgical Society of the State of Maryland 825
  Ewald's Diseases of the Stomach 911
  A Handbook of the Diseases of the Eye and their Treatment 911
  The Royal London Ophthalmic Hospital Reports 912
  A System of Practical Medicine by American Authors 913
  Practical Pathology for Students and Physicians 914
  A Treatise on Dental Surgery for Medical Practitioners and Students in Medicine 914
  The Practice of Medicine 984
  Transactions of the American Surgical Association 985
Brain and Skull of a Criminal 75
Branchiogenetic Cyst 156
Brathwaite, Dr. J. M. McC 847
British Medical Association The 159, 279, 350, 352, 432, 492, 505, 593, 670, 758, 833, 922 993
Bromidrosis, Two Cases of General 890
Brown, Dr. J. Price:
  Clergyman's Sore Throat 241
Buller, Dr. F.:
  The Electro-Magnet in Ophthalmic Surgery 236
Bursitis of the Knee 592

Cæcum, Tuberc. Ulceration of 152
Cæsarean Sections on Same Patient, Three 324
Cæsarean Section, Post-Mortem 324

PAGE.

Calculi, Renal 828
Calculi, Renal and Vesical 791 828

Campbell, Dr. G. Gordon:
  Ambulatory Lobar Pneumonia 551
Canadian Medical Association, The 77, 158, 279, 362
Canadian Medical Journalism 744
Canadian Medical Literature .140, 336, 583, 742, 818 982
Cancer of Bladder 73
Cancer of the Rectum 956
Carcinoma, Heredity of 264
Carcinoma of the Breast in its Early Stages, The Diagnosis of 462
Carcinoma of the Rectum, Three Cases of 929
Cardiac Complications of Gonorrhœa 49
Cardiac Case for Diagnosis, A 826
Cardiac Changes Demonstrated by X Rays 896
Cephalhæmatoma, Causing Bony Deformity 489
Cerebellar Ataxia 72
Cerebellar Ataxia, Hereditary 269
Cerebellar Ataxia, A Case of 583
Cerebral Localisation, Experimental 915
Cerebrum in Animals, Removal of the 267
Certificates of Death in Montreal 78
Chills and Fever in Post-Partem Anaemia 794
Cholecystitis Complicating Typhoid Fever, Suppurative 339
Cirrhosis of the Liver 473 573 797
Clinical Relations of Some Therapeutic Agents 303
Closure of the Abdominal Wound 964
Clergyman's Sore Throat 241 266
Clinical Lectures:
  Renal Calculus 553
  A Case of Chronic Lead Poisoning 636
  Mitral Stenosis—Sudden Death 729
Colon, Congenital Dilatation of the 589 697
Colpotomy, Anterior 57
Connell, Dr. W. T.:
  A Case of Endocarditis in Typhoid Fever 111
Convocation of McGill Medical College 841
Cornell, Dr. C. M. R.:
  Umbilical Fistula with prolapse of the Intestine 605
Corset Wearing, the Changes resulting from 967
Correspondence 482
Craik, Dr. Robt.:
  Introductory Lecture on Hygiene 365
Cullingworth, The Case of Dr 838
Cyanide of Potassium Poisoning 73
Cyst, Branchiogenetic 156

Dagenais, Dr. Adolphe 80
Dalpé, W. H.:
  Albinism 945
Darey, Dr. J. H.:
  A Case of Appendicitis with Three Relapses 455
Davidson, Peers:
  Doctors and the Law 874, 941
Desaulniers, Louis Léon 440
Diabetes and Exophthalmic Goitre 153
Diabetes, Transient Myopia in 135
Diagnostic Value of Light Perception The 657

PAGE.
Diarrhœas in Children, a Discussion on Summer 292, 296 346
Diphtheria, Bacteriolog. Diagnosis of... 36
Diphtheria, Report on use of Antitoxin in ... 1
Diphtheria, Two Years of Serum Treatment of ... 732
Discussion on Albuminuria... 146
Discussion on Dysmenorrhœa...681, 690 750
Discussion on Summer Diarrhœa...292 ...296 346
Doctors and the Law ... 874 941
Dislocation of the Hip, The Non-Cutting Operation for Congenital... 990
Dysmenorrhœa, Discussion on ..681, 690 750

EDGAR, Dr. C. J.:
  Fracture of the Scapula by Muscular Action ... 634
EDITORIAL:
  The Canadian Medical Association... ...77, 158, 279 362
  Certificates of Death in Montreal..... 78
  American Public Health Association. 78
  The British Medical Association..159, 279, 350, 352, 432, 492, 505, 593, 670, 758, ...833, 923 993
  Serum Diagnosis in Typhoid Fever... 281
  The Royal Victoria Hospital... 282
  Lister and Pasteur... 352
  McGill University Medical Library... 360
  Quack Medicines and Forged Testimonials ... 362
  Antitoxin Collective Investigation (Second) American Pædiatric Society... 363
  On the Teaching of Hygiene... 431
  The Montreal General Hospital Fair.. 433
  New York Graduates' Society of McGill University. ... 434
  On Hospital Reports... 435
  Montreal General Hospital Training School for Nurses ... 436
  On Intraprovincial Registration... 510
  Medical Clubs and Friendly Societies. 513
  Segundo Congresso Medica Pan-Americano... 515
  The American Government and Canadian Nurses... 519
  The First Medical Peerage... 594
  Medical Writers and Publishers.. ... 595
  An International Catalogue... 597
  McGill Medical Society of Undergraduates... 599
  Complimentary Dinner in London to the President-Elect of the British Medical Association,... 671
  Medical Library, McGill University.. 677
  Pulvis et Umbra... 759
  The Trained Nurse... 836
  The Case of Dr. Cullingworth... 838
  The Victorian Order of Nurses... 839
  Library of the Medical College, McGill University ... 839
  Convocation of McGill Medical College 841
  The Other Side of the Case...926
Electric Baths and Dyspepsia... 277
Electro-Magnet in Ophthalmic Surgery. ...236 269
Endocarditis in Typhoid Fever... 111
Endometritis... 806
Endometritis on Pregnancy and Labour, The Effects of... 560
Endometritis, Malignant ... 965
ENGLAND, Dr. F. R.:
  Discussion on Summer Diarrhœas.... 292
Entomology to Legal Medicine, Some Applications of... 265
Ephemerides 642, 794, 890 952
Epilepsy, The Operative Treatment of Focal... 406
Epilepsy and Chorea by the relief of Eye-Strain, The Cure of... 742
Erichsen, Sir John Eric... 438
Eucain in Ophthalmology... 412
Euquinine... 655
EVANS, Dr. D. J.:
  Discussion on Summer Diarrhœas.... 296
Excision of the Knee-Joint, Note on.... 403
Exophthalmic Goitre... 129
Exophthalmic Goitre and Diabetes..... 153
Exophthalmic Goitre, Toxæmia of...... 409
Extra-Uterine Fœtation, a Case of...... 935
Eye Diseases and Gout... 660
Eye, Relation of Tuberculosis of the.... 136

Femur, Myxo-Sarcoma of... 150
Fibroma of the Mesentery, Removal of. ...919, 987
Fibromyomata and Conception... 814
Fibro-Sarcoma of the Sciatic Nerve. ... 337
FINLEY, Dr. F. G.:
  Chronic Poly-Arthritis in a Child... 94
  Early Atrophy in Cerebral Diseases... 208
  Tic Convulsif... 718
Foaming Liver... 70
Foaming Liver, a Case of... 115
Formaldehyde and its Applications..... 651
Fracture of Skull... 74
Fracture of the Lower Jaw, Comminuted 918
Fractures, Ambulatory Treatment of... 957

Gangrene of the Foot... 486
GARDNER, Dr. WILLIAM:
  Three Cases of Pelvic Hæmatoma..... 521
GARROW, Dr. A. E.:
  Malformation of the Hands and Feet. 541
GARDNER, Dr. WILLIAM:
  Discussion on Dysmenorrhœa.... .. 681
Gland Extracts in Gynæcology.... 807
Gonorrhœa, Cardiac Complications in. . 49
Gonorrhœal Conjunctivitis. ... 412
GRAHAM, Dr. J. E.:
  Mitral Lesions and Pulmonary Tuberculosis ... 191
Grant, Dr. Wm... 848
GRANT, SIR JAMES:
  Note on Excision of the Knee-Joint... 403

Hæmorrhagic Pancreatitis... 202
Hæmorrhage in a Very Young Typhoid Patient... 488
Hæmatoma, Three Cases of Pelvic...521 591
HALLIDAY, Dr. J. T. I.:
  Removal of Enlarged Prostate... 722
HAMILTON, Dr. H. D.:
  Non-Malignant Tumour of the Tonsil. 249
HAMILTON, Dr. W. F.:
  A Case of Pertussis with Complications ... 452
Heart Disease ... 798
Heredity of Carcinoma, The... 264
Hereditary Cerebellar Ataxia... 269
Hernia of the Cord in a New-Born Child 327
Heart Murmurs, On the Diagnosis of Systolic ... 457

PAGE.
HINGSTON, SIR WILLIAM H.:
  The Changes in Surgical Thought and Treatment During 36 Years. 285
Hodgkin's Disease, a Case of So Called Acute 310
Hodgkin's Disease, A Case of Acute 184
Hogg, Dr. Lawrie 996
Holocain in Eye Surgery 910
Hospital Reports, On 435
Humphrey, Sir G. M 439
Hygiene, Introductory Lecture on 365
Hygiene, On the Teaching of 431

Ichthyosis Hystrix 70
Impetigo Contagiosa 590
Infection by Bacillus Aerogenes Capsulatus 119 155
Inflammation and Sundry Other Fibroses, The Relation Between 329
Injections of Corrosive Sublimate, Subconjunctival 135
Internal Secretory Activity of Glands, The 856
Intraprovincial Registration, on 510
Introductory Lecture on Hygiene 365

JAMIESON, Dr. W. H.:
  Bacteriological Diagnosis of Leprosy 548
  Infection by Bacillus Aerogenes Capsulatus 119
JAMESON, Dr. THOMAS:
  When Symptoms are Absent 534
JOHNSTON, Dr. WYATT:
  Bacter. Diagnosis of Diphtheria 36
  Bacteriological Diagnosis of Leprosy. 548
  Prof. Florence's Iodine Reaction for Seminal Stains 308
  Serum and Blood Relations in Typhoid Diagnosis 769

KLOTZ, Dr. M. O.:
  A Case of Extra-Uterine Fœtation 935
Kidney, Hypoplasia of One 587
Knee-Joint, Note on Excising the 403

LAFLEUR, Dr. H. A.:
  The Responsibility of the Student of Medicine 371
Laparotomy in a New-Born Child 327
Laval University Medical Library 994
Lead Poisoning, A Case of Chronic 636
Leprosy, The Value of the Bacteriological Diagnosis of 548 589
Leuchæmia and Pseudo Leuchæmia, Relations Between 258
Limitations of the Vesual Field of Intracranial Origin 392 488
Lipomata, On Retroperitoneal and Perirenal 529 620
Lister and Pasteur 352
Liver, A Case of Foaming 115
Liver, Accessory Lobes of 142
Liver, Cirrhosis of the 473 573 797
Liver, Foaming 70
Liver, Multiple Abscesses of 100
LOCKHART, Dr. F. A. L.:
  A Note on Primary Cancer of the Vagina 441
  Discussion on Dysmenorrhœa 690
Locomotor Ataxia, Early Optic Atrophy in 908
Lorenz's Operation for Congenital Dislocation of the Hip 990
Lymphangioma of the Tongue 155

PAGE.
Malformation of the Hands and Feet 484
Malignant Endometritis 965
Malignant Tumours, Cancer Serum and Formal in 659
Marmorek's Serum, Injection of 217 277
MARTIN, Dr. C. F.:
  Idiopathic Dilatation of the Colon 697
Martin, Professor Newall 520
Maxilla, Excision of 73
Medical Clubs and Friendly Societies 513
Medical Writers and Publishers 595
Medulla Oblongata, A Tumour of the. 338
Menstruation, The Biological Basis of 761 830
Milk, Pure 153
Mitral Lesions and Pulmonary Tuberculosis 191 276
Militia Medical Service, Reorganisation of the 252 277
Mitral Stenosis—Sudden Death 729
Montreal General Hospital, Clinic at The 259
Montreal General Hospital Fair, The 432
Montreal General Hospital Training School for Nurses 436
Mouth Concretion 484
Mouth Concretion, A Large. 789
Movable Body in Knee-Joint 140
Myxo-Sarcoma of Femur 150
Myopia in Diabetes, Transient 135
MACTAGGART, Dr. D. D.:
  Serum and Blood Solutions in Typhoid Diagnosis 769
MCCONNELL, Dr. J. B.:
  Tetany Following Scarlatina 214
McGill Medical Society of Undergraduates 599
McGill University, Medical Library 360, 677 839
MCPHEDRAN, Dr. ALEX.:
  Hæmorrhagic Pancreatitis 202

Necrosis of Serous Membranes 987
Negroes, Eye Diseases and Blindness Among The 658
Nephritis, Syphilitic 484
Nerves, Intradural Section of 320
Nerve Substance, Treat. of Loss of 127
New Drugs 468
New York Graduates' Society of McGill University 434
NICHOLLS, Dr. A. G.:
  Chronic Arthritis Deformans in Children 97
  Septic Infection in Typhoid Fever 104
Nitrous Oxide, Death from 656

OBITUARY 80, 438, 520, 846 996
Ocular Hered. Syphilis in the Second Generation 135
Ocular Defects, Vertigo and 952
Omentum, Adhesions &c., of 71
Ophthalmia, Etiology of Strumous 136
Ophthalmia Neonatorum 263
Opathalmic Surgery, The Electro-Magnet in 236 269
Oral Surgery 269
OSLER, Dr. WM.:
  Clinical Lecture—Mitral Stenosis 729
  Ephemerides 642, 794, 890 952
  Two Cases of General Bromidrosis 890
Osteo-Myelitis, Post-Typhoid 986
Ovariotomy, A Novel Method of Performing 806

PAGE.
Pan-American Congress 494 515
Pancreatitis, Haemorrhagic 202
Paralysis, Arsenical 125
Paraplegia of Potts' Disease 733
Pericardium, Puncture and Incision of 55
Pertussis, A Complicated Case of 452
Pessaries in Gynaecological Practice, The Place of 221 272
Pharmaceutical Items and New Appliances 345
Placenta and Ectopic Gestation Concerning the 414
Placenta Praevia, Air Embolism in 564
Pneumonia, Ambulatory Lobar 551 590
Poisoning by Belladonna Ointment 486
Polyarthritis in a child 94
Polyneuritis Complicating Pregnancy and Labour 562
Post-Partum Anæmia, Chills and Fever in 794
Post-Typhoid, Osteo-Myelitis 986
Potts' Disease, Some Points in the Treatment of 591 609
Pregnancy and Labour, The Effects of Endometritis on 560
Pregnancy and Labour, Polyneuritis Complicating 562
Pregnancy, A Case of Extra-Uterine 935
Pregnancy, Ruptured Tubal 987
President's Address; Pan-American Congress 494

PRÉVOST, Dr. L. COYTEUX:
  The Technique of Vaginal Hysterectomy 446
Prostate, Castration and Vasectomy for Hypertrophy of 736
Prostate Removed by Suprapubic Prostatectomy, Enlarged 722
Pruritus Vulvæ, Treatment of 813
Pseudo-Leukæmia, Cure of 52
Psychological Effectof Pelvic Disease in the Female 962
Puerperal Embolism of the Eye 909
Puerperal Endometritis, The Use of Steam in 568
Purpura Hæmorrhagica, an Obscure Case of 918
Puerperal Infection, Injection of Marmorek's Serum in 217 277
Puerperal State, Operations for Conditions Incident on the 272
Puerperal Tetanus 325 326
Pulvis et Umbra 759

Quack Medicines and Forged Testimonials 362

Railways, Hygiene of Canadian 141

REDDY Dr. H. L.:
  Injection of Marmorek's Serum in Puerperal Infection 217

REILLY, Dr. W. J.:
  Treatment by the Tallerman-Sheffield Hot-Air Apparatus 724
Renal Calculus 553
Rectum, Excision of the 150
Rectum, Three Cases of Carcinoma of the 929
Rectum, Cancer of the 956
Resection of the Bowel 156 189
Resection of Nearly Eight Feet of Small Intestine 919

PAGE.
Resection of Nearly Eight Feet of Small Intestine 980
Responsibility of the Student of Medicine, The 371
RETROSPECT OF CURRENT LITERATURE:
  Medicine 49, 124, 315, 406, 457, 732, 797 894
  Surgery 54, 127, 320, 462, 646, 736, 801, 897 956
  Obstetrics 323, 465, 560 813
  Gynaecology 57, 804 960
  Pharmacology and Therapeutics 129, 466, 651, 809, 899
  Pathology 60, 329, 411, 473, 573 967
  Ophthalmology 135, 409, 657 908
  Diseases of Children 570
Retroversion of the Uterus, One Hundred Cases of 272
Reynolds, Dr. R. T 847

ROBINS, Dr. G. D.:
  A Case of So-Called Acute Hodgkin's Disease 310
Royal Victoria Hospital, Clinic at the 274
Royal Victoria Hospital, The 282

Sarcoma, Excision of the Scapula for 301
Scapula by Muscular Action, Fracture of the 634
Scapula for Sarcoma, Excision of the 301
Scarlet Fever, Treatment of 570
Scarlatina, Relapse in 124
Sciatic Nerve, Fibro-Sarcoma of the 337
Seminal Stains, Prof. Florence's Iodine Reaction for 308 346
Septic Infection in Typhoid Fever 104
Serum Diagnosis in Typhoid Fever 281 587
Serum Reaction, The Quantitative Estimation of the 827

SHAW, Dr. R. B.:
  Tuberc. Bacilli in Fæces from a Non-Tuberc. Intestine 542
SHEPHERD, Dr. F. J.:
  Excision of the Scapula for Sarcoma 301
Skull, Fracture of 74

SOCIETY PROCEEDINGS:
  Montreal Medico-Chirurgical Society. 70, 146, 346, 425, 484, 587, 664, 750, 826 915 986
New York Academy of Medicine 990
  Pan-American Congress 494
  Canadian Medical Association 258
  British Medical Association—Montreal Branch 492
Spina Bifida 664
STEWART, Dr. JAMES:
  Aneurysm of the Ascending Aorta 386
  Clinical Lecture Chronic Lead Poisoning 636
  Treatment by the Tallerman-Sheffield Hot-Air Apparatus 724
STEWART, Dr. JOHN:
  Address in Surgery 182
STIRLING, Dr, J. W.:
  Limitations of the Visual Field of Intracranial origin 392
Strumous Ophthalmia, Etiology of 136
Subconjunctival Injections of Corrosive Sublimate 135
Surgery Before the Use of Anaesthetics, Recollections of 648
Surgery, The Debatable Points in 268 285
Surgical Thought and Treatment, A Review of Some Changes in 285
Surgical Shock and How to Prevent it 888

PAGE.
Sympathetic Ophthalmia, Experimental Studies in 113
Syphilis, Tabes and 125
Syphilis in the Second Generation, Ocular Hered. 135
Syphilitic Affections of the Eye, Treatment of 336
Syphilitic Nephritis 184

Tabes and Syphilis 125
Talipes Equinus, An Extreme Case of 793
Tallerman Sheffield Hot Air Apparatus, Treatment by the 724
Tapeworm in Children, Treatment of Threadworms and 656
Tetanus, Puerperal 325 326
Tetany Following Scarlatina 214 277
The First Medical Peerage 591
The other side of the Case 926
Therapeutic Suggestions 655
THORBURN, Dr. JAMES:
  President's Address 161
Threadworms and Tapeworms in Children Treatment of 656
Thyroidectomy 269
Thyroid, Haemorrhagic Cysts of the 742, 780 917
Tic Convulsif, A Peculiar Form of Family 718 827
Tic Douloureux, Treatment of 466
Tobacco Poisoning, A Respiratory Symptom of 921
TOBIN, Dr. W.:
  Reorganisation of the Militia Medical Service 252
Tongue, Lymphangioma of 155
Tonsillitis and Diphtheria, Association of 826
Tonsil, Non Malignant Tumour of 249 278
Tracheal Tugging, Note on 386
Trained Nurse, The 836
Tropometer, The 73
Tuberc. Bacilli in Faeces from a Non-Tuberc. Intestine 542 589
Tuberculin, A New Preparation of 894
Tubercular Ulceration of Caecum 152
Tuberculosis of the Eye, Relation of 136
Typhoid Bacillus, Clinical Demonstration of the 315
Typhoid Fever, A Case of Endocarditis in 111
Typhoid Fever, Eliminative and Antiseptic Treatment of 267
Typhoid Fever, Ocular Symptoms in 659
Typhoid Fever, Serum Diagnosis in 281 587
Typhoid Fever, Suppurative Cholecystitis Complicating 339

PAGE.
Typhoid Fever, Septic Infection in 101
Typhoid Patient, Haemorrhage in a Very Young 188
Typhoid Serum Reaction, Influence of Age upon the 668 709
Typhoid Ulcer, Perforating 601 666

Ulcer, Two Cases of Perforated Gastric 915
Umbilical Fistula with Prolapse of the Intestine 605
Uterine Haemorrhage and Rupture of the Circular Sinus 323
Uterine Prolapse, Incontinence of Urine from 807
Uterine Tympanites an Indication for Caesarean Section? Is 566
Uterus, Malpositions of the 960

Vaccination, The Centenary of 81
Vagina, Primary Cancer of the 441
Vaginal Fixation of the Round Ligaments 228
Vaginal Hysterectomy, The Technique of 446
Valedictory Address 849
Vertigo and Ocular Defects 952
Vesical Calculi 664
Vicarious Labour Pains 465 826
Victorian Order of Nurses, The 839
VINEBERG, Dr. H. N.:
  Vaginal Fixation of the Round Ligaments 228
Volitional Tremor Simulating Disseminated Sclerosis 151

WEBSTER, Dr. J. C.:
  The Biological Basis of Menstruation. 761
  The Place of Pessaries in Gynaecological Practice 221
Wells, Sir Spencer 846
When Symptoms are Absent 534
WILKINS, Dr. GEORGE:
  Address in Medicine 168
WILSON, Dr. CHAS. W.:
  Some Points in the Treatment of Potts' Disease 609
WOLF, Dr. C. G. S.:
  Clinical Relations of Some Therapeutic Agents 303
Wounds from Firearms 153

X Rays on the Blind, Action of 909
X Rays, Cardiac Changes Demonstrated by 896
X Rays, Dermatitis from 801
X Rays, Lesions Produced by 583

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THE REPORT OF THE AMERICAN PEDIATRIC SOCIETY'S COLLECTIVE INVESTIGATION INTO THE USE OF ANTITOXIN IN THE TREATMENT OF DIPHTHERIA IN PRIVATE PRACTICE.[1]

This subject was chosen by the officers of the Society for its eighth annual meeting, with the belief that a large amount of valuable experience not otherwise available might in this way be reached and collated. It was also believed that a more trustworthy estimate of the value of the serum treatment of diphtheria might thus be obtained than by statistics taken from hospital practice. There are very few hospitals in America that receive diphtheria patients, and the conditions under which patients are admitted to hospitals and the surroundings while there are so different from those of private practice, that the measure of success in hospital cases cannot be taken as an index of the results which have been obtained upon this side of the Atlantic with the new treatment.

In order, therefore, to obtain an expression of opinion from American physicians as to the serum treatment, after what had been, with most of them, their first year's experience, a circular letter was prepared and issued by the Committee early in April. This was distributed through the members of the Society as widely as could be done during the time allowed. An attempt was made to reach as many physicians as possible who had had experience with the remedy.

The first surprise of the Committee was in learning how very widely the serum treatment had been employed, especially in the Eastern and mid-Western states. With more time, the number of cases collected might easily have been doubled and perhaps trebled:

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[1] Reported at the Eighth Annual Meeting held at Montreal, Canada, May 26, 1896.

but enough reports have come in to enable one to see what opinion was held on the 1st of May, 1896, by American physicians who have used this remedy.

The circular letter asked for information upon the following points: Age, previous condition, duration of disease when the first injection was made, the number of injections, the extent of the membrane—tonsils, nose, pharynx, and larynx, whether or not the diagnosis was confirmed by culture, complications or sequelæ, viz., pneumonia, nephrisis, sepsis, paralysis; the result, and remarks, including other treatment employed, the preparation of antitoxin used, and general impression drawn from the cases.

Reports were returned from 615 different physicians, with 3,628 cases. Of these, 244 cases have been excluded from our statistical tables. These were cases in which the disease was said to have been confined to the tonsils and the diagnosis not confirmed by culture, and therefore open to question. A few cases were reported in such doubtful terms as to leave the diagnosis uncertain. The figures herewith given are therefore made up from cases in which the diagnosis was confirmed by culture (embracing about two-thirds of the whole number) and others giving pretty clear evidence of diphtheria, either in the fact that they had been contracted from other undoubted cases, or where the membrane had invaded other parts besides the tonsils, such as the palate, pharynx, nose, or larynx. It is possible that among the latter we have admitted some streptococcus cases, but the number of such is certainly very small.

There are left, then, of these cases, 3,384 for analysis. These have been observed in the practice of 613 physicians from 114 cities and towns, in fifteen different states, the District of Columbia and the Dominion of Canada.

In the general opinion of the reporters the type of diphtheria during the past year has not differed materially from that seen in previous years, so that it has been average diphtheria which has been treated. If there is any difference in the severity of the cases included in these reports from those of average diphtheria, it is that they embrace a rather larger proportion of very bad cases than are usually brought together in statistics. The cases according to the extent of the membrane, are grouped as follows: In 593 the tonsils alone were involved. In 1397 the tonsils and pharynx, the tonsils and nose, the pharynx and nose, or all three were affected. In 1256 cases the larynx was affected either alone or with the tonsils, pharynx, and nose, one or all. In many instances the statement is made by the reporters that the serum was resorted to only when the condition of the patient had become alarmingly worse under ordinary methods of treatment. This is shown by the unusually large number of cases in which injections were made late in the disease. Again, many physicians being as yet in some dread of the unfavorable effects of the serum have hesitated to use it in mild cases and have given it only in those which from the onset gave evidence of being of a severe type. The expense of the serum has unquestionably deterred many from employing it in mild cases. These facts, it is believed, will more than outweigh the bias of any antitoxin enthusiasts by including many mild cases which would have recovered under any treatment. It will, however, be remembered that tonsillar cases not confirmed by culture have not been included.

Only two reports embracing a series of over 100 cases have been received, most of the observers having sent in from five to twenty cases, although there are many reports of single cases, particularly of single fatal ones.

In addition to this material which has come in response to the circular, there have been placed at the disposal of the Committee, by the courtesy of Dr. H. M. Biggs, 942 cases treated in their homes in the tenements of New York. Of these, 856 were injected by the corps of inspectors of the New York Health Board, upon the request of the attending physician, and eighty-six others were treated by physicians receiving free antitoxin from the Health Board. In the first group the diagnosis of diphtheria was confirmed by culture in every case, and in all of the latter except twenty-six; in these the diagnosis rested upon extensive membranous deposits or laryngeal invasion. The cases of the New York Health Board were of more than ordinarily severe type, 485, or more than fifty per cent. of these, being reported as being in bad condition at the time of injection; to mild cases the inspectors were not often called. Further, an unusually large number of them (38 per cent.) were injected on or after the fourth day of the disease. In 182 of these cases only the tonsils were affected; in 466 the tonsils with the pharynx or nose, the pharynx and nose, or all three; in 294 the larynx was invaded either with or without disease of the tonsils, nose, or pharynx.

Through the courtesy of Dr. Biggs the Committee is able to include also a partial report upon 1,468 cases from Chicago, treated in their homes in that city by a corps of inspectors of the Health Department. It was the custom in Chicago to send an inspector to every tenement-house case reported, and to administer the serum unless it was refused by the parents. These cases were therefore treated much earlier and the results were correspondingly better than were obtained in New York, although the serum used was the same in both cities, viz., that of the New York Health Board.

THE RESULT AS INFLUENCED BY THE TIME OF INJECTION.

In table I. are given the results obtained in these three different groups of cases, classified according to the day on which they received the first injection of serum antitoxin.

TABLE I.—DAY OF INJECTION AND RESULT.

	Injected on 1st Day.			Injected on 2nd Day.			Injected on 3rd Day.			Injected on 4th Day.			Injected on 5th Day.			Day of Injection Unknown.			Totals.		
	Cases.	Deaths.	Mortality per cent.	Cases.	Deaths.	Mortality per cent.	Cases.	Deaths.	Mortality per cent.	Cases.	Deaths.	Mortality per cent.	Cases.	Deaths.	Mortality per cent.	Cases.	Deaths.	Mortality per cent.	Cases.	Deaths.	Mortality per cent.
The Committee's Report.	764	38	4.9	1065	89	8.3	620	79	12.7	336	77	22.9	390	152	38.9	215	15	7.0	3384	450	13.0
New York Health Board.	126	11	8.7	215	26	12.0	228	37	16.6	153	32	20.9	203	59	29.0	17	4	23.5	942	169	17.8
Chicago Health Board.	106	0	0	336	5	1.5	660	18	2.7	269	38	14.1	97	33	34.0	0	0	0	1468	94	6.4
Totals.	996	49	4.9	1616	120	7.4	1508	134	8.8	758	147	20.7	690	244	35.3	232	19	8.2	5794	713	12.3

The grand total gives 5,794 cases with 713 deaths, or a mortality of 12.3 per cent., including every case returned ; but the reports show that 218 cases were moribund at the time of injection or died within twenty-four hours of the first injection. Should these be excluded there would remain 5,576 cases (in which the serum may be said to have had a chance) with a mortality of 8.8 per cent.

Of the 4,120 cases injected during the first three days there were 303 deaths—a mortality of 7.3 per cent., including every case returned. If from these we deduct the cases which were moribund at the time of injection, or which died within twenty-four hours, we have 4,013 cases, with a mortality of 4.8 per cent. Behring's original claim, that if cases were injected on the first or second day the mortality would not be 5 per cent., is more than substantiated by these figures. The good results obtained in third-day injections were a surprise to your Committee. But after three days have passed the mortality rises rapidly, and does not differ materially from ordinary diphtheria statistics. Our figures emphasize the statement so often made that relatively little benefit is seen from antitoxin after three days; however, it must be said that striking improvement has in some cases been seen even when the serum has been injected as late as the fifth or sixth day. The duration of the disease, therefore, is no contraindication to its use.

THE INFLUENCE OF BACTERIOLOGICAL DIAGNOSIS UPON THE STATISTICS.

This is shown in Table II.

TABLE II.—DIAGNOSIS CONFIRMED BY BACTERIOLOGICAL EXAMINATION.

Committee's Reports	2,453 cases ;	302 deaths ;	mortality,	12.3	per cent.
N. Y. Board of Health..........	916 “	160 “	“	16.9	“ “
Chicago “ “	1,468 “	94 “	“	6.4	“ “
Totals......................	4,837 “	556 “	“	11.4	“ “
(Excluding 145 cases which were moribund or which died in twenty-four hours)................................			“	8.7	“ “

DIAGNOSIS FROM CLINICAL EVIDENCE ONLY.

Committee's Reports	931 cases ;	148 deaths ;	mortality,	15.9	per cent.
N. Y. Board of Health..........	26 “	9 “	“	34.6	“ “
Totals......................	957 “	157 “	“	16.3	“ “
(Excluding 72 cases either moribund or dying in twenty-four hours)..			“	7.6	“ “

In the cases in which the diagnosis was not confirmed by a bacteriological examination the mortality is thus 5 per cent. higher than in the bacteriological cases. This difference is to be explained by two facts: first, as already stated, that we have excluded from our reports all tonsillar cases (and hence most of the very mild ones) not confirmed by bacteriological examinations; and secondly, by the fact that this group of cases comprises those treated in the country where physicians have hesitated to use antitoxin unless the type of the disease was a grave one, and where also a large proportion of the injections were made later than in the cities. However, should we leave out the moribund cases, the mortality is but 9.6 per cent., which differs but slightly from the cases confirmed by bacteriological diagnosis.

In our subsequent statistics we shall consider together all the cases bacteriologically confirmed and otherwise, as the statistics are not materially altered by this grouping.

THE RESULTS AS MODIFIED BY THE AGE OF THE PATIENTS.

Unfortunately the ages have not been furnished in the report of the Chicago cases, and we have therefore only the cases reported to the Committee and those from the New York Board of Health for analysis. In Table III. are shown the mortality of the different ages grouped separately.

TABLE III.—AGE AND RESULTS OF TREATMENT.

	0 to 2 Years.			2 to 5 Years.			5 to 10 Years.			10 to 15 Yrs.			15 to 20 Yrs.			20 Years and Over.		
	Cases.	Deaths.	Mortality per cent.	Cases.	Deaths.	Mortality per cent.	Cases.	Deaths.	Mortality per cent.	Cases.	Deaths.	Mortality per cent.	Cases.	Deaths.	Mortality per cent.	Cases.	Deaths.	Mortality per cent.
Committee's Report.	631	137	21.7	1276	175	13.7	883	108	12.2	276	19	6.8	112	4	3.6	214	9	4.2
New York Health Board.	236	65	27.5	466	83	17.8	178	21	11.2	29	0	0	11	0	0	22	0	0
Totals.	867	202	23.3	1742	258	14.7	1061	129	12.1	305	19	6.2	123	4	3.2	236	9	3.8
Moribund.	43			59			59			9			0			4		
Mortality Excluding Moribund Cases.			19.2			13.3			8.7			3.3			3.2			2.1

The highest mortality is seen in all reports to be in the cases under two years, but including all those returned, even those that were moribund when injected, the death rate was but 23.3 per cent. (21.7 per cent. of the Committee's cases), while if we exclude cases moribund when injected or dying within the first twenty-four hours, it falls to 19.2 per cent.

After the second year there is noticed a steady decline in mortality up to adult life. In many of the reports previously published the statement has been made that no striking improvement in results was observed in adult cases treated by the serum. Our figures strongly contradict this opinion. Of 359 cases over fifteen years old, which were returned, there were but thirteen deaths. That the reader may judge for himself how far antitoxin is to be held responsible for the result, a brief summary of these thirteen cases is appended.

Case I.—Fifteen years old; injected on the fourth day; membrane covering tonsils and pharynx; profoundly septic, sinking rapidly when injected; died in two hours. "My only death in seventeen cases" (Jones, Gloucester, Mass.).

Case II.—Forty-four years old; injected on the fourth day; membrane on the tonsils and pharynx; in bad condition; died three hours after injection. The tonsils had been previously incised, the early diagnosis having been quinsy.

Case III.—Thirty-one years old; injected on the sixth day; membrane on the tonsils, nose, pharynx, and larynx; intubation; sepsis; in bad condition; lived eight hours after injection.

Case IV.—Thirty-five years old; injected on the fifth day; membrane on the pharynx and nose (?); in bad condition; septic; died in twelve hours.

Case V.—Sixty years old; in bad condition; had serious mitral regurgitation; injected on the fourth day; membrane covering tonsils, pharynx and larynx; died from heart failure on following day.

Case VI.—Sixty years old; "kidney trouble for years;" injected on the third day; very extensive membrane, covering tonsils, pharynx and nose; profound sepsis; in bad condition; died suddenly on the day after injection.

Case VII.—Seventeen years old; in bad condition; convalescing from measles; enormous adenopathy; profound sepsis; exceedingly high temperature; membrane covering tonsils and nose; injected at the end of forty-eight hours; three injections, temporary improvement after each one; duration of life not given.

Case VIII.—Fifteen years old; in bad condition; injected on the ninth day; membrane covering tonsils, nose, pharynx and larynx; no operation; enormous infiltration of the tissues of the neck; nephritis; sepsis; lived four days and died of sepsis.

Case IX.—Twenty years old; injected on the third day; membrane upon the tonsils, nose, pharynx, and larynx; "a stubborn patient who got up before he was allowed, and died suddenly after it."

Case X.—Twenty-five years old; injected on the fifth day; membrane covering both tonsils, entire pharynx, and completely occluding nose; nephritis and sepsis; throat cleared off entirely; died suddenly on the fourteenth day from cardiac paralysis.

Case XI.—Nineteen years old; injected on the fifth day; membrane upon the tonsils and pharynx; profound sepsis; duration of life unknown.

CASE XII.—Twenty-two years old; injected on the fourth day; membrane on the tonsils and gums; sepsis; died on the sixth day.

CASE XIII.—The well-known Brooklyn case, reported in 1895. Girl, sixteen years old, who died suddenly ten minutes after injection.

Such are the adult cases which antitoxin failed to cure. Four of them were moribund at the time of injection, no one of them living over twelve hours. Two, both sixty years old, were already crippled by previous organic disease, one of the heart, and the other of the kidneys. In the measles case there was undoubted evidence of streptococcus septicæmia. Only two of the cases were injected as early as the third day; three of them on the fifth day; and one on the ninth day. Omitting the four moribund cases the mortality of 355 adult cases treated with the serum is 2.5 per cent.

PARALYSIS.

Reliable data upon this point and those hereafter to be mentioned are to be had only from the 3,384 reports returned to the Committee. Of these paralytic sequelæ appeared in 328 cases, 9.7 per cent. Of the 2,934 cases which recovered, paralysis was present in 276, or 9.4 per cent. Of the 450 cases which died, paralysis was noted in fifty-two, or 11.4 per cent.

The variety of the paralysis and the date of injection is shown in the following table:

TABLE IV.—VARIETY OF PARALYSIS AND THE DAY OF INJECTION.

RECOVERY CASES.	CASES	DAY OF INJECTION.					
		1st Day.	2nd Day.	3rd Day.	4th Day.	5th Day.	Unknown.
Paralysis mentioned (variety not specified).........	132	8	32	32	19	16	23
Throat only (aphonia, nasal voice or regurgitation).	114	16	21	25	11	16	24
Extremities	14	3	5	2	....	3	1
Ocular...	11	....	4	3	1	2	1
General (multiple neuritis)............................	4	....	1	2	1	....	....
Sterno-mastoid..................................	1	....	1	....	....	....	....
FATAL CASES.							
Paralysis mentioned (variety not specified).......	9	....	3	2	1	2	1
*Cardiac, late after throat clear (in 4 of them throat also)..	32	1	2	8	9	8	4
Throat only..	6	....	2	....	....	....	4
General late..	4	....	1	....	1	2	....
Muscles of Respiration............................	1	....	1	....	....	....	....
Totals..	328	28	73	76	43	49	59

* Cases of heart failure occurring at the height of the disease have not been included here; although they are mentioned among the cases of cardiac paralysis in the table of fatal cases.

Observations of some of the individual cases are interesting, particularly those of cardiac paralysis. It is twice stated that the child had gotten up and walked out of the house, where it was found dead· Twice death occurred after sitting up suddenly; once, on jumping from one bed into another. One patient of twenty years got up contrary to orders and died soon afterward. Another patient was apparently well until he indulged in a large quantity of cake and candy, soon after which cardiac symptoms developed, and he died shortly. One case was that of a woman sixty years old, who had serious organic cardiac disease.

It is difficult from these statistics to state what protective power the serum may have over the nerve cells and fibres. Apparently this is not great unless the injections are made early in the disease, and even then in severe cases the amount of damage done to these tissues in twenty-four hours may be very great, even irreparable. Time is not the only element in estimating the effect of the diphtheria toxines.

Great discrepancy exists in the statements made regarding the frequency of paralytic sequelæ after diphtheria. In a series of 1,000 cases reported by Lennox Browne, paralytic sequelæ were present in 14 per cent. In 2,448 cases by Sanné, paralysis was noted in 11 per cent. In the series of cases here reported, the difference is slightly in favor of the antitoxine treatment, but paralysis is certainly frequent enough to show how extremely susceptible the nervous elements are to the diphtheria toxines. One thing is quite striking from a study of these cases, and that is the proportion that have died from late cardiac paralysis. That very many of them would undoubtedly have succumbed earlier in the disease from suffocation (laryngeal cases) or diphtheritic toxæmia, had the serum not been employed, is beyond question. Although the serum is able to rescue even many such desparate cases, it cannot overcome the effects of the toxines upon the cells, which have occurred before it was injected.

SEPSIS.

Sepsis is stated to have been present in 362 of the 3,384 cases or 10.7 per cent. It was present in 145 or 33 per cent. of the fatal cases. Some explanation is necessary for a correct appreciation of these figures. The majority of the reporters, it is plain from their remarks, have not distinguished between diphtheritic toxæmia and streptococcus sepsis. The former is certainly meant in the great majority of the cases. There is a very small proportion in which there is evidence of streptococcus sepsis. The six cases complicating measles, and the five complicating scarlet fever, however, should possibly be included among this list.

NEPHRITIS.

The statements on this point are quite unsatisfactory. The reports state that nephritis was present 350 times, or in 10 per cent. of the cases. On the one hand it must be stated that the diagnosis of nephritis rests in many cases simply upon the presence of albumen in the urine; but, on the other hand, it is true that in a large number of the cases, more than half, no examination of the urine is recorded as having been made, so that it is impossible to state with anything like approximate accuracy, the frequency of nephritis in these cases. Of the 450 fatal cases, the presence of nephritis is mentioned without qualification or explanation in thirty-nine cases; these being usually put down also as septic, dying in the acute stage of the disease. There are fifteen fatal cases, however, in which the renal disease was stated as the cause of death. In no less than nine the nephritis occurred late in the disease, usually during the second or third week. In these fifteen cases the evidence of severe nephritis was conclusive such symptoms being present as dropsy, suppression of urine, with coma or convulsions.

BRONCHO-PNEUMONIA.

Broncho-pneumonia is said to have been present in 193 of the 3,384 cases, or 5.9 per cent., a remarkably small proportion when compared with hospital statistics. Among the patients that recovered, broncho-pneumonia was noted 114 times or in 3.8 per cent.; among the fatal cases seventy-nine times, or in 17.5 per cent., but in only about one-half of these was the pneumonia the cause of death. Of these thirty-seven were laryngeal cases operated upon late, ten were septic cases, and the pulmonary disease was coincident with the height of the diphtheritic process. In seven pneumonia was independent of both the above conditions, occurring late in the disease in all but two.

LARYNGEAL CASES.

Of the 3,384 cases reported to the Committee, the larynx is stated to have been involved in 1,256 cases or 37.5 per cent. This proportion is somewhat higher than is usual, and is partly explained by the fact that several physicians have sent in the reports only of their laryngeal cases. These laryngeal cases occurred in the practice of 379 physicians.

In 691, or a little more than one-half the number, no operation was done, and in this group there were 128 deaths. In forty-eight of them laryngeal obstruction was responsible for the fatal issue, operation being refused by the parents, or no reason for its being neglected having been given. In the eighty remaining fatal cases the patients died of other complications, and not from the laryngeal disease.

In the 563 cases, therefore, or 16.9 per cent. of the whole number, there was clinical evidence that the larynx was involved, and yet recovery took place without operation. In many of these cases the symptoms of stenosis were severe, and yet disappeared after injection without intubation. No one feature of the cases of diphtheria treated by antitoxin has excited more surprise among the physicians who have reported them, than the prompt arrest, by the timely administration of the serum, of membrane which was rapidly spreading downwards below the larynx. Such expressions abound in the reports as "wonderful," "marvelous," "prepared to do intubation, but at my next visit the patient was so much better it was unnecessary," "in all my experience with diphtheria have never seen anything like it before," "no unprejudiced mind could see such effects and not be convinced of the value of the serum," etc., etc.

In establishing the value of the serum, nothing has been so convincing as the ability of antitoxin, properly administered, to check the rapid spreading of membrane downward in the respiratory tract, as is attested by the observations of more than 350 physicians who have sent in reports.

Turning now to the operative cases we find the same remarkable effects of the antitoxin noticeable. Operations were done in 565 cases, or in 16.7 per cent. of the entire number reported. Intubation was performed 533 times with 138 deaths, or a mortality of 25.9 per cent. In the above are included nine cases in which a secondary tracheotomy was done, with seven deaths. In thirty-two tracheotomy only was done with twelve deaths, a mortality of 37.4 per cent. Of the 565 operative cases, sixty-six were either moribund at the time of operation, or died within twenty-four hours after injection. Should these be deducted, there remain 499 cases operated upon by intubation or tracheotomy, with 84 deaths, a mortality of 16.9 per cent.

Of the 2,819 cases not operated upon, there were 312 deaths, a mortality of 11.3 per cent. Deducting the moribund cases, or those dying within twenty-four hours after injection, the total majority of all non-operative cases was 9.12 per cent.

Let us compare the results of intubation in cases in which the serum was used, with those obtained with this operation before the serum was introduced. Of 5,546 intubation cases in the practice of 242 physicians, collected by McNaughton and Maddren (1892) the mortality was 69.5 per cent. Since that time statistics have improved materially by the general use (in and about New York, at least) of calomel fumigations. With this addition, the best results published (those of Brown) showed in 279 cases a mortality of 51.6 per cent.

Let us put beside the cases of McNaughton and Maddren the 533 intubations with antitoxin, with 25.9 per cent. mortality. With Brown's personal cases let us compare those of the fourteen observers who have reported to the Committee ten or more intubation operations in cases injected with serum. These comprise 280 cases with sixty-five deaths, a mortality of 23.2 per cent. In both comparisons the mortality without the serum is more than twice as great as in the cases in which serum was used.

The reports of some individual observers concerning intubation with the serum are interesting:

Neff, New York: twenty-seven operations, with twenty-seven recoveries.

Rosenthal, Philadelphia: eighteen operations, with sixteen recoveries.

Booker, Baltimore: seventeen operations, with seventeen recoveries, including one aged ten months, and one seven and a half-months.

Seward, New York: eight operations with eight recoveries.

McNaughton, Brooklyn: "In my last seventy-two operations without serum, mortality 66.6 per cent.; in my first seventy-two operations with serum, mortality 33.3 per cent."

O'Dwyer, New York: "In my last 100 intubations, first seventy, without serum, mortality 73 per cent.; last thirty, with serum, mortality 33.3 per cent."

But even these figures do not adequately express the benefit of antitoxin in laryngeal cases. Witness the fact that over one-half the laryngeal cases did not require operation at all. Formerly 10 per cent. of recoveries was the record for laryngeal cases not operated upon. Surely, if it does nothing else the serum saves at least double the number of cases of laryngeal diphtheria that has been saved by any other method of treatment.

The great preponderance of intubation over tracheotomy operations shows how much more highly the profession in this country esteems the former operation.

A STUDY OF THE FATAL CASES.

Of the 450 fatal cases in the Committee's Report, 229, or one-half, received their first injection of the serum on or after the fourth day of the disease, and 152, or over one-third of these, on or after the fifth day.

There were fifty-eight cases in which it was stated that the child was moribund at the time of injection, the serum being administered without the slightest expectation of benefit, but at the earnest solicitation of the parents.

There remain 350 cases in which the cause of death could be pretty accurately determined by the reports. These died from the following causes, the most important cause being placed first:

Sepsis (including diphtheritic toxæmia) was the cause of death in 105 cases; of which sixteen had nephritis, four were intubated or tracheotomized, two were laryngeal cases not operated upon, four had paralysis, one had pneumonia, and in one the fatal sepsis was attributed to a trumatic condition of the left knee.

Cardiac paralysis was the cause of death in fifty-three cases. Under this head are included cases of sudden heart failure occurring at the height of the disease (twenty-one in number) as well as those more commonly designated as heart paralysis, where death occurred suddenly after the throat cleared off. Of the latter there were thirty-two examples; four of these cases had throat paralysis, nineteen were septic, eight had nephritis, five were intubated, and one tracheotomized.

Broncho-pneumonia was put down as the cause of death in fifty-four cases. In thirty-seven of these it followed laryngeal diphtheria; of these twenty-two were intubated, and four tracheotomized; two had nephritis; nine were septic. Broncho-pneumonia and sepsis was the cause of death in ten cases, of which three had nephritis and one general paralysis. Broncho-pneumonia caused death in seven cases, apart from sepsis or laryngeal diphtheria; of these only one had nephritis; one died from heart failure; and in five pneumonia came on late in the disease.

Laryngeal diphtheria without operation caused death in forty-eight cases. In some of these the operation was refused by the parents, in others it was neglected by the physician, the patients dying of asphyxia; three of these cases had nephritis, four were septic, two had pneumonia, and one had sepsis and nephritis.

Diphtheritic tracheitis or bronchitis caused death in eleven cases; all of these were intubated, and in two there was evidence of the existence of membrane in the bronchi before operation. There were thirty-three other cases in which death followed laryngeal diphtheria without the supervention of pneumonia. It is highly probable that in some of these death was due to membranous tracheitis or bronchitis. All of them were operated upon; ten were septic, two had paralysis, and one had nephritis.

Sudden obstruction of the intubation tube was the cause of death in three other laryngeal cases.

The tube was coughed up in three cases, fatal asphyxia occurring before the physician could be summoned.

Died on the table during tracheotomy, one case.

Nephritis was the cause of death in fifteen cases; seven of these were septic, and three had been intubated.

General paralysis was the cause of death in five cases; in all probably the pneumogastric was involved.

Paralysis of the respiratory muscles produced death in one case, one of laryngeal diphtheria, which was intubated, and was complicated by broncho-pneumonia.

Measles associated with diphtheria produced death in six cases; five of these were laryngeal and were intubated; in two there was pneumonia, and in two sepsis. Diphtheria developed during the height of the measles, or immediately followed it.

Scarlet fever with diphtheria was the cause of death in six cases; in three of these there was broncho-pneumonia, nephritis and sepsis; in two scarlet fever preceded diphtheria, and in one of these there was sepsis with gangrene of the tonsils. In the sixth case the patient died of scarlet fever, which developed during convalescence from the diphtheria.

Gangrene of the cervical glands or cellular tissue of the neck was the cause of death in two cases associated with profound general sepsis.

Endocarditis caused death in one case, nineteen days after the diphtheria.

Diphtheritic inflammation of the tracheal wound with sepsis caused death in one case.

General tuberculosis, five weeks after diphtheria, was assigned as the cause of death in one case.

Exhaustion was the cause of death in three cases, one a protracted case: another complicated by pneumonia and sepsis; one by nephritis.

Convulsions was the cause of death in three cases apart from disease of the kidneys. In one, the well-known Brooklyn case, the girl died ten minutes after the injection, in another twenty-four hours after injection, in the third the particulars were not given.

Meningitis was assigned as the cause of death in one case.

THE KIND OF ANTITOXIN USED.

They are given in the order of frequency with which they have have been used. First, the serum prepared by the New York Board of Health; second, Behring's; third, Gibier's;[1] fourth, Mulford's; fifth, Aronson's; sixth, Roux's. In addition a large number of cases are reported as having been treated by the serum prepared by the Health Boards of different cities—Brooklyn, Newark, Rochester, Pittsburgh, etc. The largest number of cases have been treated by the serum prepared by the New York Health Board, a very large number by Behring's serum, all others being relatively in small numbers.

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[1] It is worthy of note that in the tests made by the State Board of Health of Massachusetts, published under date of April 6, 1896, this serum was found far below the standard as labelled upon the bottle; thus a package marked to contain 2,500 units, by test was found to contain less than 700. All the other varieties of serum tested were found essentially up to the standard.

Dosage and number of injections. In the great majority of cases but one injection is reported. In very severe ones two and three have been given. The largest amount is in a case by Weimer (Chicago) who gave eighteen injections of Behring's serum to a laryngeal case in a child thirteen years old. Another instance of ten injections is reported with no unfavorable symptoms.

As a rule the dosage has been smaller in antitoxin units than is now considered advisable, particularly in many of the laryngeal cases and others injected later than the second day.

CASES INJECTED REASONABLY EARLY (DURING THE FIRST THREE DAYS) IN WHICH ANTITOXIN IS SAID TO HAVE PRODUCED NO EFFECT, THE DISEASE ENDING FATALLY.

These cases are twenty in number. Brief reports are introduced that the reader may judge to what degree they may be regarded as a test of the serum treatment. In our statistical tables all of them have been included among the fatal cases.

In Cases I. and II. the cultures were reported negative. Case I., by Gallagher, New York: Child, eighteen months old; septic: although no eruption was present, the reporter was "inclined on reflection to regard this case as one of scarlatinal sore throat."

Case II., by Potter, Buffalo: Male, fourteen months old; two cultures made, but no Löffler bacilli found; membrane in the nose and pharynx. Injected on the third day, one dose of Behring's serum No. 1. No improvement; death from sepsis. "Probably pseudo-diphtheria" (I. H. P.).

In Cases III. to IX. no cultures were made.

Case III., by Tefft, New Rochelle: Seven years old; injected after eighteen hours' illness; two injections of Behring's No. 2 serum; membrane on the tonsils, pharynx and nose; no effect observed from injections; patient dying on the third day.

Case IV., by Tefft: Male, four years old; membrane on the tonsils and pharynx; injected after thirty-six hours' illness with Behring's No. 2; died on the third day; no noticeable effect from the injection.

Case V., by Tefft: Six years old: membrane on the tonsils, nose, and pharynx; septic: injected after thirty-six hours' illness: three injections of Behring's No. 2. "Saw no effect from the injections the disease going steadily on to a fatal termination."

Case VI., by Cameron, Montreal: Two and a half years old; fifty hours ill; membrane on the tonsils, nose and pharynx; septic; no improvement noticed, and child died twenty hours after injection.

Case VII., by Baker, Newtonville, Mass.: Three years old; laryngeal diphtheria; injected on the third day 10 c.c. Roux's serum; cyanosis; intubation; temperature 103° F., and continued high until death in eighteen hours after operation; injections had no effect.

Case VIII., by Anderson, New York: Three years old; injected after three hours' illness; membrane on the tonsils, nose and pharynx; one injection New York Health Board antitoxin. "A case of malignant diphtheria, full duration twenty-four hours."

Case IX., by McLain, Washington: Four years old; twelve hours sick; membrane on the pharynx and larynx; two injections; no operation; first injection early in the morning, the other early in the afternoon; died the same day; no change in the condition; antitoxin had no apparent effect.

In Cases X. to XIII. diphtheria complicated measles, all reported by W. T. Alexander, New York. Disease confined to the larynx in all; in three the stenosis developed during measles, and in one while the patient was convalescing from measles; diagnosis confirmed by culture in every case, and in all intubation performed. Antitoxin seemed to have no effect, the cases going on to a fatal termination; all received their injections within twenty-four hours after the laryngeal symptoms appeared.

In three cases—XIV. to XVI.—the type of the disease was malignant from the outset.

Case XIV., by Lloyd, Philadelphia: Fifteen months old; injected after thirty-six hours' illness; diagnosis confirmed by culture; membrane covered the tonsils, pharynx, nose, and larynx; intubation; sepsis; death on the fifth day. Although antitoxin was used as promptly as possible no perceptible effect noticed. One injection, Behring's No. 3, was given.

Case XV., by Wert, Mount Vernon, N.Y.: Eighteen months old; injected on the third day; diagnosis confirmed by culture: membrane on the tonsils and pharynx. "Very intense type of the disease." Antitoxin could not be procured before the third day; Gibier's serum used. "Died suddenly in apparent convulsions about ten hours after injection; urine not examined; very little passed."

Case XVI., by Ingraham: Six years old; membrane covered the tonsils, pharynx, and larynx; diagnosis confirmed by culture; pneumonia present; condition very bad; injected after two and a half days' illness; three injections of Behring's serum; no benefit noticed.

Case XVII., by Johnson, Buffalo: Three years old; twelve hours ill; case septic from the start; membrane on the tonsils, pharynx, and larynx; diagnosis confirmed by culture. "Antitoxin apparently had very little effect."

Case XVIII., by Baker, Newtonville, Mass.: Two and a half years old; twenty hours ill; disease confined to larynx; diagnosis confirmed by culture; one injection of Gibier's serum; intubation. "Was doing well a few minutes before death when child got up in its crib, changed color and died almost immediately." Death attributed to "sudden heart failure; found no obstruction of the tube."

Case XIX., by Story, Washington: Five years old; in fair condition; thirty-six hours ill; diagnosis confirmed by culture; membrane on the tonsils, pharynx, and larynx; one injection of United States Marine Hospital antitoxin; injection produced no effect.

CASES IN WHICH UNFAVORABLE SYMPTOMS WERE, MIGHT HAVE BEEN, OR WERE BELIEVED TO HAVE BEEN, DUE TO ANTITOXIN INJECTIONS.

Only three cases reported to the Committee could by any possibility be placed in this category. All of the details furnished by the reporters are reproduced:

Case I., by Kortright, Brooklyn: Sudden death in convulsions ten minutes after injection. This case is the already well known Valentine case, occurring in Brooklyn in the spring of 1895. The principal points were as follows: A girl sixteen years old; in good condition; tonsillar diphtheria; diagnosis confirmed by culture; injected on the first day with 10 c.c. Behring's serum; died in convulsions ten minutes later.

Case II., by Kerley, New York: Fairly healthy boy, two and one half years old; membrane on tonsils, pharynx, and in nose. Diagnosis confirmed by culture; injected on the morning of the fourth day with 10 c.c., (1000 units) New York Health Board serum; temperature at time of injection 100.4° F.; no sepsis, and child apparently not very sick; urine free from albumen. Distinctly worse after injection; in ten hours temperature rose to 103° F.; urine albuminous; throat cleared off rapidly, but marked prostration and great anæmia, with irregular fluctuating temperature continued and death from exhaustion with heart failure four days after the use of the serum.

Case III., by Eynon, New York: Male, three and one half years old; diagnosis confirmed by culture; two days ill; membrane on tonsils and in nose; two injections New York Health Board serum. "A rapid nephritis developed after the second injection causing coma, convulsions and death twenty hours after the second injection." In response to an inquiry for further particulars the following was received: "The case seemed a mild one, but the injection was given one afternoon and repeated the following afternoon, about 1,500 units in all. The urine up to that time had not been examined. About fourteen or sixteen hours after the second injection unfavorable symptoms began to develop pointing to infection of the kidneys. The urine was found to be loaded with albumen. My impression at the time was that the antitoxin either produced, hastened or intensified nephritis, thereby causing the fatal termination."

In regard to the three fatal cases just cited, Case I. is wholly unexplained. In Case II., the query arises, did this sudden change hinge upon the injection of the serum, or was it one of those unexplained abrupt changes for the worse in a case apparently progressing favorably, so often observed in diphtheria? As regards Case III., it will be seen from the letter that the evidence is not at all conclusive. All details available are given, and the reader may draw his own conclusions.

CLINICAL COMMENTS.

The following are selected from hundreds which have been received, and may be taken fairly to represent the sentiments of physicians who have sent in reports:

Dr. Douglas H. Stewart, New York, sends reports of 4 cases, all desperate ones, and all "presumably fatal under any other form of treatment." Very extensive membrane in all; larynx involved in 3; in one neglected case in a child three years old, *injected upon the fifth day,* the membrane covered the tonsils, nose, pharynx, and larynx. Broncho-pneumonia, nephritis and sepsis all present. Temperature 107° F. at the time of the first injection. Prostration so great that he dared not attempt intubation. Believes that this case would certainly have been fatal in a few hours without antitoxin. Perfect recovery.

In another case three years old, membrane first discovered in the left ear, next morning seen upon the tonsils, and spread in a few hours over the pharynx into the larynx and trachea. Intubation necessary in a few hours; had never seen membrane spread so rapidly as in this child. Urine albuminous; membrane subsequently expelled from larynx and trachea in large casts, with profuse bloody expectoration. Complete recovery on the ninth day. The physician describes this as "the very worst case of diphtheria that has ever come under my notice." Five thousand four hundred antitoxin units were given in four injections. He remarks: "My experiences in the past have been so very unfortunate that the advocates of antiseptics or therapeusis were a constant surprise to me. It has been my fate to have the most desperate cases unloaded upon my shoulders. I had been forced into the belief that the profession was absolutely powerless in the presence of true diphtheria; have lost case after case with tube in the larynx and calomel fumigations at work. Previous to antitoxin my only hope had become centered in nature and stimulants. In two years have not lost a single case, and surely I may be pardoned if I suffer from diphtheria-phobia in a sub-acute form, and use antitoxin sometimes unnecessarily."

Dr. L. L. Danforth, New York, states that during his twenty-two years of practice in New York he has seen many fatal cases of diphtheria, had used all kinds of remedies, mainly those of the homeopathic school, and while he had as much confidence in the latter as in anything else, he had seen so many deaths during the year past that he "hailed with delight the advent of antitoxin, and determined to use it." Reports five cases, all of a severe type. "The result in every case has been marvelous. I would not dare to treat a case now without antitoxin."

Dr. H. W. Berg, New York, reporting fourteen cases, says: "I have not yet ceased to be surprised at the recovery of some of these cases, which, in the light of my former experience with diphtheria treated without antitoxin, seemed to be irretrievably lost."

Dr. George McNaughton, Brooklyn, reports seventy-two laryngeal cases, with twenty-four deaths; sixty-seven of these were intubated, with twenty-one deaths. He states that he has kept no record of cases other than laryngeal ones, as these seemed the best test of the serum treatment. He believes that if the serum is used early, very many cases will not need operation for the relief of stenosis. "I would urge the use of antitoxin in all cases of croup in any patient who has an exudation upon the pharynx; would not wait for bacteriological confirmation of diagnosis, for in so doing valuable time is lost." Has noticed that the tube is coughed up more frequently in injected cases, and believed this due to the fact that the swelling of the tissues subsides at an early date.

Dr. D. C. Moriarta, Saratoga, reporting four cases, says that the first was a malignant one and "I only used the remedy because I am Health Officer and was urged to do so, as the type of the disease was that form from which I have seen recovery but once in eleven years." Boy five years old, four days ill when injected; great prostration, rapid breathing, and he was "practically gone." Nares filled and tonsils and pharynx covered; severe nasal hemorrhage; cervical glands greatly swollen; heart's action very frequent and feeble; child unable to lie down. Behring's serum twenty c.c. injected; in six hours evidently more comfortable; in eighteen hours decidedly improved; in twenty-four hours sitting up and feeling much better; in forty-eight hours all urgent symptoms gone and membrane loosening. Subsequently had nephritis which lasted six weeks, and multiple neuritis which persisted for three months, but ultimately recovered perfectly. "I send this report because it converted me. No unbiased person familiar with diphtheria could see such results as this and not feel there must be good in it."

Dr. F. M. Crandall, New York, sends report of a child seven years old. Membrane on the tonsils and in larynx, with croup for forty hours when antitoxin was injected and intubation done. Progress of the disease had been rapid; semi-stupor and eyes half-open; very feeble and rapid pulse; intense toxæmia; general cyanosis. Both cyanosis and dyspnœa persisted after intubation, showing clearly the presence of membrane below the tube. Case regarded as "absolutely hopeless." The first change was seen in the disappearance of toxæmia, with improvement in the pulse, clearness of the mind, etc.; later a change in the local condition; large masses of membrane were expelled from the larynx and trachea, necessitating frequent removals of the tube. Tube finally removed in a week with complete recovery.

Dr. Reynolds, Baltimore, mentions a case showing the danger of relying too implicitly upon the bacteriological diagnosis. Male, three years. Culture reported only staphylococcus and streptococcus, consequently injection delayed until the fifth day, when membrane covered tonsils, nose, and pharynx. Child died two days later. A sister subsequently contracted the disease, received antitoxin on the third day and recovered. The reporter would not wholly rely upon the culture test for diagnosis.

SUMMARY.

(1) The report includes returns from 615 physicians. Of this number more than 600 have pronounced themselves as strongly in favor of the serum treatment, the great majority being enthusiastic in its advocacy.

(2) The cases included have been drawn from localities widely separated from each other, so that any pecularity of local conditions to which might be ascribed the favorable reports must be excluded.

(3) The report includes the record of every case returned except those in which the evidence of diphtheria was clearly questionable.

It will be noted that doubtful cases which recovered have been excluded, while doubtful cases which were fatal have been included.

(4) No new cases of sudden death immediately after injection have been returned.

(5) The number of cases injected reasonably early in which the serum appeared not to influence the progress of the disease was but nineteen, these being made up of nine cases of somewhat doubtful diagnosis; four cases of diphtheria complicating measles, and three malignant cases in which the progress was so rapid that the cases had passed beyond any reasonable prospect of recovery before the serum was used. In two of these the serum was of uncertain strength and of doubtful value.

(6) The number of cases in which the patients appeared to have been made worse by serum were three, and among these there is only one new case in which the result may fairly be attributed to the injection.

(7) The general mortality in the 5,794 cases reported was 12.3 per cent.; excluding the cases moribund at the time of injection or dying within twenty-four hours, it was 8.8 per cent.

(8) The most striking improvement was seen in the cases injected during the first three days. Of 4,120 such cases the mortality was 7.3 per cent.; excluding cases moribund at the time of injection or dying within twenty-four hours, it was 4.8 per cent.

(9) The mortality of 1,448 cases injected on or after the fourth day was 27 per cent.

(10) The most convincing argument, and to the minds of the Committee an absolutely unanswerable one, in favour of serum therapy is found in the results obtained in the 1,256 laryngeal cases (membranous croup). In one-half of these recovery took place without operation, in a large proportion of which the stenosis was severe. Of the 533 cases in which intubation was performed the mortality was 25.9 per cent., or less than half as great as has ever been reported by any other method of treatment.

(11) The proportion of cases of broncho-pneumonia—5.9 per cent.—is very small and in striking contrast to results published from hospital sources.

(12) As against the two or three instances in which the serum is believed to have acted unfavourably upon the heart might be cited a large number in which there was a distinct improvement in the heart's action after the serum was injected.

(13) There is very little, if any, evidence to show that nephritis was caused in any case by the injection of serum. The number of

cases of genuine nephritis is remarkably small, the deaths from that source numbering but fifteen.

(14) The effect of the serum on the nervous system is less marked than upon any other part of the body; paralytic sequelæ being recorded in 9.7 per cent. of the cases, the reports going to show that the protection afforded by the serum is not great unless injections are made very early.

The Committee feels that this has been such a responsible task that it has thought best to state the principle which has guided it in making up the returns. While it has endeavoured to present the favourable results with judicial fairness, it has also tried to give equal or even greater prominence to cases unfavourable to antitoxin.

In conclusion the Committee desires in behalf of the Society to express its thanks to members of the profession who have co-operated so actively in this investigation, and to Dr. A. R. Guerard for the preparation of the statistical tables.

(Signed)
L. EMMET HOLT, M.D.,
W. P. NORTHRUP, M.D.,
JOSEPH O'DWYER, M.D.,
SAMUEL S. ADAMS, M.D.,
Committee.

THE ACTION OF THE SOCIETY UPON THE REPORT.

At the close of its presentation, the Society voted to accept the report of the Committee, and after a full discussion it was decided to embody its conclusions in the following resolutions:

(1.) *Dosage.* For a child over two years old the dosage of antitoxin should be in all laryngeal cases with stenosis, and in all other severe cases, 1500 to 2000 units for the first injection, to be repeated in from eighteen to twenty-four hours if there is no improvement; a third dose after a similar interval if necessary. For severe cases in children under two years, and for mild cases over that age, the initial dose should be 1000 units, to be repeated as above if necessary; a second dose is not usually required. The dosage should always be estimated in antitoxin units and not of the amount of serum.

(2) *Quality of Antitoxin.* The most concentrated strength of an absolutely reliable preparation.

(3) *Time of Administration.* Antitoxin should be administered as early as possible on a clinical diagnosis, not waiting for a bacteriological culture. However late the first observation is made, an injection should be given unless the progress of the case is favourable and satisfactory.

The Committee was appointed to continue its work for another year and was requested to issue another circular asking for the further co-operation of the profession, this circular to be sent out as soon as possible in order that physicians may record their cases as they occur through the coming year.

UPON
ARRESTED OR REPAIRED DISSECTING ANEURYSMS.[1]

(Continued.)

BY

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It will be well to summarise the leading features of these two cases, with especial reference to the existence in them of the condition of dissecting aneurysm.

Case I. *Male, æt. 45. Duration of condition nearly a year. Sudden onset with dyspnœa and sense of oppression in the chest. Condition complicated with cardiac weakness, paroxysms of an anginoid character, arterio-sclerosis, interstitial nephritis and hydrothorax. Great tenderness over the abdomen, more especially over the epigastrium and left hypochondrium. Attacks of intense pain in the upper portion of the abdomen, affecting also the back, opposite the level of the epigastrium. Sudden death during an attack of "retching."*

Arterial conditions found post-mortem: Nodose arterio-sclerosis of the hyaline-fibroid type. Primary rupture of the inner coats of the termination of the thoracic aorta, 3.25 c.m. above the cœliac axis. Dissection between the layers of the media upwards as far as the middle of the arch of the aorta, downwards to the right external and internal iliacs and to the first portion of the left femoral, and laterally along the right renal, with re-entrance into the right external iliac and left femoral. The sac above the primary rupture almost filled with organising clot, and below having smooth walls lined by endothelium. Rupture of several of the lumbar arteries and of the inferior mesenteric at their origins, with secondary passage of these vessels from the sac.

Case II. *Female, æt. 43. Duration of condition apparently 10 weeks, following upon long continued dyspepsia, palpitations and loss of flesh, and complicated by development of aneurysm of the superior mesenteric artery. Aching pain across the abdomen growing progressively worse, with vomiting and great tenderness on pressure. Pain also across the back. Sudden death from rupture of the aneurysm of the superior mesenteric artery.*

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[1] Read before the Montreal Medico-Chirurgical Society, April 3rd, 1896.

Arterial conditions found post-mortem : Root of aorta somewhat dilated ; nodose arterio-sclerosis of a "gelatinous" character. Healed aneurysm (filled with laminated clot) of right subclavian artery. Sacculated aneurysm of abdominal aorta. False aneurysm (with intraperitoneal rupture) of superior mesenteric. Primary rupture of the inner coats of the termination of the thoracic aorta 3 cm. above the cœliac axis. Dissection between the layers of the media upwards as far as the level of the bifurcation of the trachea with termination in a blind pouch, downwards for 4 cm., ending bluntly. Walls of the sac smooth in neighbourhood of primary rupture, somewhat roughened elsewhere. No re-entrance or secondary communications between aorta and sac.

These two cases present, therefore, what Peacock termed the " advanced stage " of dissecting aneurysm, or what Boström has more recently described as " healed " dissecting aneurysm (ausgeheilte aneurysma). Neither term is, I think, quite satisfactory, for the expression " advanced " conveys the idea of a more extreme condition, while " healed " implies a filling up or obliteration of the aneurysmal sac. What is wanted is a term which shall express the fact that in this class of cases the process of dissection has not directly caused death—and as I have already stated the term " arrested " appears best adapted to convey this meaning.

In studying the literature of the subject, the rarity of the arrested or " healed " cases is very noticeable. Peacock, in 1863, was only able to record 7 out of a total of 80 of all varieties of the condition. Boström, in 1888, gave a list of 17 (which included only 4 of the chronic cases referred to by Peacock, though why the other 3 were omitted, it is difficult to understand.) These 17 were collected out of 177 cases of all forms. By a fuller study, more especially of the English and American literature, and the addition of the rare cases that have been recorded since 1888, I am able, with the addition of the two cases here recorded, to increase the number to 39, or including those cases in which, despite imperfect history and description, there is reason to believe that the author's had before them examples of this condition, to 35. For brevity and convenience of reference I have drawn up the main details of these cases in the form of a table. In this table I have included all cases I have been able to discover in which death did not supervene until a month or more after the primary rupture, or in which failing definite information as to the onset of the condition, the walls of the sac had so far undergone repair that they are described as having a smooth or glistening appearance)and consequently had become possessed of a lining endothelium). In the tables the asterisk following the names of the observers indicates that the original authority has been consulted by me. For those cases which have no asterisk I am, I believe, without exception, indebted to Boström.

An analysis of the table reveals some points of not a little value.

In the first place, with reference to sex, it is seen that of the 30 cases, 16 occurred in the male and 13 in the female sex, (while one remains unknown) or to all intents and purposes there is an equal incidence of the condition in the two sexes. This is an incidence widely different from what obtains for aneurysms in general, and is an indication that of aneurysms in general among females, the cases of chronic dissecting aneurysms are relatively more frequent than the other forms. Why this should be the case I shall discuss more fully after analyzing other facts revealed by this table. With reference to age incidence, the following is the analysis of the cases in which the ages were stated :

Under 35	0
Between 35 and 40	4
“ 45 “ 55	7
“ 55 “ 65	5
“ 45 “ 75	4
“ 75 “ 85	2
Over 85	2
Total	24

The addition of the cases in which the age could only be guessed at does not appear to alter the value of this table in any way. One case is recorded as being from a patient between 30 and 40, another as occurring after childbirth, four in individuals of middle age. There is no clear evidence of any case occurring under the age of 36 years. A slightly greater number occur between 45 and 55 than at any other life period, and beyond this the number per decennium steadily diminishes. I am not fully versed in mortality tables, but think that from these figures it is safe to conclude not that the incidence of this condition is most frequent between 45 and 55, but that from 35 onwards, taking into account the proportion of individuals that reach the successive age periods, there is a progressive increase in (remote) liability to this condition.

One fact, however, stands out very clearly, that the condition is not developed in youth or early adult life, and that thus contrary to Boström's contention, made curiously enough with a similar though smaller table of cases before him (*loc. cit.*, p. 69), there is an ætiological relationship between age and incidence. It is clear, therefore, that for the production of the condition there must be a factor present which is not in evidence in the earlier years of life. Mere trauma, upon which Boström relies, is as liable to be in action before 35 as after that age, and while I am inclined to believe that some direct blow or sudden strain is in every case the direct cause of the development of the condition, I cannot but conclude that such trauma is only effective when there is already some departure of the state of the arterial coats from the perfectly healthy condition.

This departure, I quite agree with Boström, is not the development of an extensive atheroma. Reading the descriptions of the cases here collected it is very remarkable how in case after case attention is called to the slight extent of arterio-sclerosis present and the rarity of calcareous plaques. Indeed it is a matter of common observation that atheromatous ulcers are as common as dissecting aneurysms are rare. We see frequently extensive breaking down of atheromatous plaques and the development of ulcers with partially undermined walls, but these appear never to lead to dissection of the coats by the blood.

But the calcareous atheroma is only one stage and that an advanced stage of the arterio-sclerotic process. There are other stages, or more truly, varieties. In the two cases brought forward by me I have been not a little impressed by the fact that while there was in each a nodose arterio-sclerosis, the plaques, despite their size, showed little evidence of calcification, but were of the hyaline fibroid type, or as Dr. Finley described it in his post-mortem report on the second case, were "gelatinous." And looking through the records of the other cases I find that this same condition has been not unfrequently noted. The analysis is as follows: Out of twenty-two descriptions in which mention is made of the condition of the aorta there is not a single case in which the aorta did not show some disease, only three in which there is stated to have been advanced atheroma. These three are those of Pennock (1st case), [a woman of 75 years of age with "numerous ossific deposits."]; Pennock (2nd case), [a woman verging upon her century. Here the intima was thickly studded with "cartilaginous" deposits], and Symes, in which it is stated that the aorta was very much diseased. Save in the first of these it is difficult to comprehend with certainty the form of arterio-sclerosis present. The other two may or may not have presented the condition seen in my two cases, in which there was extensive nodose arterio-sclerosis, with singularly little evidence of steatomatous or calcareous degeneration. In three further cases (Peacock, Laennec, Fagge) it is simply stated that the aorta was atheromatous, in another (Boström's 3rd case) a few calcareous plaques were present, the aortic intima being smooth in its first portion where the primary rupture occurred, extensively sclerosed below. Finny speaks of moderate atheroma with but few calcareous patches; Latham and Swaine, of patches of degeneration in various places up to cartilaginous hardness. The remaining nine cases all presented slight arterio-sclerotic changes.

The impression is certainly left that this condition of chronic dissecting aneurysm is throughout associated with some arterio-sclerosis, but that it rarely is associated with advanced degenerative arterio-sclerosis, or with that extensive calcareous change which is recognized as atheroma *par excellence*. Why this should be so is difficult to explain, and inasmuch as whatever explanation be given must be largely hypothetical, I prefer to do little more than draw attention to the fact of this relationship and to suggest that where, as in my two cases, there is an extensive proliferation of hyaline fibroid tissue there is a development of a tissue at once brittle, and inelastic which still remains organically and intimately connected with the deeper tissues; hence rupture affecting this thickened intima is liable to extend by continuity of tissue into the underlying layers of the media. Where, on the other hand, there is fatty or calcareous degeneration of the intima there is no such organic and fibroid connection; the very necrosis indicated by such degenerations leads to a separation between the dead and living tissues, and rupture thus is little liable to extend by continuity; at most the degenerated tissue breaks away from the underlying healthy layers and an ulcer is the result. Such an explanation does not preclude the possibility that in some cases, as Marchand has suggested. atheromatous changes in the media may be the essential cause. In any case I gravely doubt whether mere strain or trauma ever induces the condition, as Boström urges, wholly apart from antecedent disease of the arterial walls.

That dissecting aneurysms in general are relatively common in the female as compared with other forms of aneurysm is not improbably due to the fact that while an extreme degree of arterio-sclerosis is not so frequent in this as in the male sex, a moderate degree is fairly common. That as compared with the acute form a still larger proportion of females exhibit the condition of chronic or repaired dissecting aneurysm is evidently due to the weaker heart action and lower blood pressure of the sex, in consequence of which once the blood penetrates between the coats of the media there is less tendency to rapid dissection and extension outwards, or yielding and rupture of the outer coats, and once the condition has become developed, greater tendency towards canalisation and repair.

The effect of the blood pressure in determining whether a dissecting aneurysm shall be acute or chronic is well shown by comparing the relative frequency of site of primary rupture in all cases of dissecting aneurysm with that in the chronic form.

The most satisfactory tables that I have by me for this purpose are those of Peacock, embracing 74 cases of all forms. Of these 74 the primary rupture was situated in 57 cases in first part of the aorta. Of these—

38 (66.6 %) died suddenly or within 24 hours.
9 died in between 1 and 17 days.
5 survived for at least some months.
5 of doubtful duration.

8 cases at or near the innominate artery.

7 (87.5 %) died suddenly or within 24 hours.
1 survived nine months.

7 cases beyond the origin of the left subclavian artery or in the descending aorta.

3 (44.4 %) died within 24 hours.
1 survived seven days.
1 three months.
2 of doubtful duration (death from intercurrent disease).

2 cases in the abdominal aorta.

0 died suddenly.
2 from intercurrent disease.

The above table which I have modified (in shape only) from Peacock's table, shows very clearly that where the primary rupture is near to the heart, there is greater likelihood of sudden or briefly supervening death (and that in the majority of cases, by extension into the pericardial cavity), while the further it is from the heart—and the less the blood pressure—the fewer the cases of sudden death. At the same time, nearness to the heart does not necessarily lead to sudden death. Thus analysing the cases of chronic dissecting aneurysm here collected is will be seen that the primary rupture had taken place :

Immediately above the valves or in the ascending aorta in.....	13 cases[1]
Below origin of left subclavian and first part of thoracic aorta..	12 cases
Lower part of thoracic aorta	5 cases
Abdominal aorta..	1 or 2[1]
Iliac artery	1 or 3

There is evidently a fair number of cases in which primary rupture of the first part of the aorta did not lead to sudden death, but to the formation of a repaired dissecting aneurysm. Nevertheless, the proportion of cases of dissecting aneurysm, starting from the more distal portions of the aorta, is very striking, when the relative rarity of all forms of dissecting aneurysms affecting these remoter regions is taken into account. In other words, the further the primary rupture is from the heart and the less the force of the blood, the greater the liability for the production of a chronic or repaired aneurysm.

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[1] Oliver's case with its stated four separate aneurysms is counted in four times in this table.

There are many other points brought out by these tables which are worthy of note, but which I can only mention in passing. There is, in the first place, the frequency with which branches of the aorta gain a secondary origin from the sac. The arteries most frequently affected are the intercostals and the lumbars, but a study of the tables will show that every branch, even to the largest, may thus receive its blood supply from the aneurysmal sac, and appear to originate directly therefrom. This, in more than one case, *e.g.*. Shroeder Van der Kolk, Bouillaud, has led to the condition being regarded as one of congenital abnormality of the aorta. It is probable that Boström's explanation generally holds, and that such rupture of the aortic branches dates from the moment of dissection. Nevertheless the appearance presented by the right renal artery in my first case suggests that at times the secondary origin may be of later date and due to the degeneration of the unfavourably situated first portions of sundry of the branches given off from the aorta as they traverse the aneurysmal sac.

Lastly, as to the diagnosis. Only once (by Latham and Swaine) has the condition been diagnosed during life. Where, as in our two cases, the lower thoracic and upper abdominal aorta are affected, we have, it is true, a very definite series of associated pains—due largely it would seem to pressure upon the nerve plexuses—but even with similar pains present it is singularly difficult to diagnose an ordinary abdominal or lower thoracic aneurysm. *A fortiori* it is more difficult to diagnose this condition in which during life no definite tumour is perceptible.

Case.	Sex and Age.	Primary Rupture.	Place or Places of Reentrance.	(1) Duration. (2) Cause of Death.	Remarks.
1. SHEKELTON * *Dublin Hosp, Rep'ts*, III., 1822, p. 231......	F. Mid. Age.	3 in. (7·6 cm.) above aortic bifurcat'n	R. common iliac art. 3 in. below origin. Common iliac 1½ in below origin.	(1) Not known. (2) Intercurrent disease.	Dissecting room subject. Interior of sac perfectly smooth walled with slight atheromatous patches similar to those in aortic intima.
2. SHEKELTON * *Ibid*................	F. Mid. Age.	Beginning of left common iliac art.	Two orifices lower down in same artery.	(1) Not known. (2) Tuberculosis.	Dissecting room subject. Aorta showed frequent atheromatous patches. Sac with smooth surface and thick intima.
3. LAENNEC * *Traite de l'Auscultation.* (Paris, 1826, II., p. 696.................	M. 67	About 2 in. from origin of descending aorta.	Not mentioned. Apparently absent, though sac continued to beginning of common iliacs and along cœliac axis.	(1) More than 1 month. (2) ———	Patient had rapidly emaciated before adm. to hospital. In hospital 32 days. Sudden death without symptoms of cardiac or resp. disturbance. Atheroma of ascending aorta with dilatation. Sac had firm reddened walls with occasional fibro-cartilaginous plaques, traversed by intercostal arteries filled with blood-clot. Injection of vasa vasorum. Aortic wall thick but smooth, with but slight atheroma.
4. HOPE *Diseases of the Heart, etc.* German transl. by Becker. Berlin, 1833, p. 385................	F. Mid. Age.	Below origin of left subclavian.	Origin of cœliac axis.	(1) ——— (2) Rupture into mediastinum. Sudden death.	Sac smooth walled, thought to be a malformation, with aneurismal dilatation opposite origin. Intercostal arteries given off from the sac. This case, referred to by Bostroem, is not given in the English Edition.
5. PENNOCK * *Am. Jl. of Med. Sc.*, XXIII., 1838, p. 1, 1st case..................	F. 75	½ in. above aortic valves	Immediately above bifurcation of aorta. Numerous foramina all along course of aorta.	(1) 8 years. (2) Œdema, dyspnœa.	Intercostal arteries of left side given off from sac. Recognized dissection between layers of media.
6. HENDERSON * *London & Edin. Monthly J. Med. Sc.*, III., 1843, p. 623.....	F. 60	Below origin of left subclavian.	Left common iliac.	(1) 9 months. (2) Ascites and dyspnœa.	Slight sclerotic thickenings of aorta, more marked of sac. Dissection recognized between layers of media.

7. BOUILLAUD *Arch. gen. de Méd.*, 4me sér., XV., 1847, p. 248	M. 36	Immediately above aortic valves.	Beginning of right iliac.	(1) 1 year. (2) Obstruction to circulation.	Little yellow flecks and some fibro-cartilaginous nodules in aorta. Sac, extensive atheroma. Left subclavian given off from sac. Regarded as a malformation.
8. PENNOCK (2nd case)* *In 1st Amer. Edi. of Hope's Diseases of the Heart and Great Vessels.* Philadelphia, 1842, p. 107	F, nearly 100	Immediately above the valves.	At origins of vessels from aortic arch (two openings), of cœliac axis, and renal arteries.	(1) 3½ years. (2) Great dyspnœa and general dropsy.	Sac lined by false membrane simulating serous tissue. Intima of aorta thickly studded with cartilaginous deposits. Upwards of twenty dilatations or saccular aneurisms in different parts of arterial system.
9. GOUPIL *Bull. d. l. Soc. Anat.*, 1853, p. 276	M. 52	Immediately above aortic valves.	Opened above into the internal carotid, lower opening at level of left bronchus, other openings at origins of large vessels.	(1) 11 years. (2) Hydropericardium.	Several openings between sac and aorta with passage of some of the larger arteries off from the sac.
10. SCHROEDER VAN KOLK * *In Vrolik's Tabula ad. illustr. Embryogen., etc.* Amsterdam, 1851. Table 88	M. 30-40	Between 11th and 12th intercostal arteries.	Bifurcation of aorta.	(1) —— (2) Bilious fever.	Inferior mesenteric and right common iliac, last intercostal and some lumbars given off from sac. Cœliac axis, superior mesenteric and right renal arise from both cavities. Regarded as a malformation.
11. LATHAM AND SWAINE * Trans. Path. Soc. London. VII., 1855-56, p. 106	M. 56	A few lines below origin of left subclavian.	Right common iliac.	(1) 3 months. (2) Circulatory obstruction.	Diagnosed during life. In aorta patches of degeneration in various places up to cartilaginous hardness. Much clot in sac.
12. LEBERT *Traité d'anat. path.* Paris, 1857, p. 752	M. 48	1·5 cm. (⅝ in.) above aortic valves.	Origin of cœliac axis and thro' intercostal foramina.	(1) 2 months after sudden attack. (2) ——	Slight atheroma of aorta. All the intercostal arteries given off from sac. Sac wider than lumen of aorta. Sac presented abundant evidence of development of new connective tissue layer.
13. V. RECKINGHAUSEN *Virch. Arch.*, XXX., 1864, p. 372	F.	1 in. below the ligamentum arteriosum.	Origin of cœliac axis.	(1) —— (2) Pelvic abscess after childbirth.	Apparently of comparatively recent development, with strands of the media crossing the sac. If this be the case referred to by Helmstedter, the condition was of several weeks development.

CASE.	SEX AND AGE.	PRIMARY RUPTURE.	PLACE OR PLACES OF RE-ENTRANCE.	(1) DURATION. (2) CAUSE OF DEATH.	REMARKS.
14. SYMES * *Dublin G. J. Med. Sci.*, XXXVII., 1864, p 466..................	M. 50	Above aortic valves	Left common iliac at bifurcation of aorta.	(1) — (2) Anasaraea.	Vessel very much diseased Many of the branches implicated (innominate, left subcl., branches of left side of aorta.)
15. HESCHL *Wein. Med. Wochenschr.*, XVII., 1867, p. 90..................	F. 50	Immediately below left subclavian.	Left common iliac 2 in. below origin. Orifices also near left renal.	(1) Several months (2) Bright's disease.	Aorta very slightly atheromatous Wall of sac presented pigmented nodules (of old blood-clot.)
16. TRAIBICH *Inaug. Diss. Wurzburg.* 1867.............	M. 53	Above aortic valves	Right iliac, origins of lumbar and renal arteries.	(1) —— (2) Bronchitis, etc.	Thick, white, transparent lining to sac
17. FAGGE * *Med. Chir. Trans.*, LII., 1869, p. 341.......	M. 71	1 in. above valves. 2nd opening below left subclavian.	Left common iliac ½ in. below origin and right external iliac.	(1) Six years. (2) ——	Aortic intima smooth above, atheromatous below. Sac smooth below atheromatous above. Innominate artery given off from sac
18. FISCHER, G. *Inaug. Diss. Nuremberg*, 1872........ (Boström's 4th case)	F. 67	Between 6th and 7th intercostals. 9 cm. above cœliac axis.	Close to bifurcation of aorta and (?) left renal artery.	(1) —— (2) Sudden death by rupture of sac at origin.	Sac with glistening membrane. 10th intercostal given off from sac, as also 2nd or 3rd lumbars. Sac aneurysmal at origin
19. FRIEDLÄNDER *Virchow's Archives*, LXXVIII., 1879, p. 357.	M. 67	Immediately above aortic valves.	Left common iliac.	(1) —— (2) Bronchitis	Intercostal arteries given off from sac. Sac covered by a layer of new formed tissue similar to normal aortic intima.
20. LÜTTICH * *Virch. Arch.*, C., 1885, p. 180...... ..	F. 36	2.5 cm. (1 in.) above aortic valves.	11 cm. (4 in.) below left subclavian. Other orifices at origins of innominate and left subclavian arteries.	(1) At the least several months. (2) Dyspnœa and œdema.	Innominate and left carotid given off from sac. Aortic intima smooth save in ascending portion but thickened Wall of sac resembled normal aortic intima. Smooth and glistening.

21. FINNY * *Dublin J. of Med Sci.*, LXXX., 1885, pp. 159 and 276, also *Lancet*, II., 1885, p. 68	M. 43.	1½ in. above diaphragm.	Bifurcation of common iliac on each side.	(1) ? 19 months. (2) Asthenia, hemiplegia, &c.	Moderate atheroma of aorta with but few calcareous patches. Cœliac axis, right renal, and lumbar arteries given off from sac. Sacculated aneurysm of anterior wall of sac.
22. JACOBSEN *Inaug. Diss. Kiel.*, 1885	F. 51	Immediately below Ductus Botalli.	Origin of cœliac axis.	(1) ——— (2) Chronic nephritis.	Intima of aorta nowhere extensively thickened. Flattened nodules here and there in sac.
23. GRAHAM (Toronto)* *Am. Jl. of Med. Sc.*, n. ser., XCI., 1886, p. 155	M. Mid. Age.	Immediately beyond origin of left subclavian.	Origin of right renal artery. Two or three accessory openings-	(1) More than thirty years (2) Rupture into left lining opposite primary opening.	The sac had a corrugated appearance. Right renal and several smaller arteries given off from sac.
24. BOSTRÖM * *D. Arch. f. Klin. Med.*, LXII., 1881, p. 1. Case 1.	M. 61	At level of ligamentum arteriosum.	Origin of cœliac, left renal and primary branches of superior mesenteric.	(1) 22 years. (2) Pontine hæmorrhage.	Slight fibroid atheroma of both aorta and sac. Left 10-12th and 1st left lumbar intercostal arteries of left diaphragmatic, left renal and branches of sup. mesenteric. Cœliac axis arose from sac.
25. BOSTRÖM * *Ibid.*, p. 37. Case 2.	M. 60	At level of ligamentum arteriosum.	Main opening at level of right renal artery. Other openings in left subclavian artery, in several intercostals, diaphragmatic artery and cœliac axis.	(1) ——— (2) Chronic bronchitis.	Slight nodose sclerosis of aortic intima. Several communications between aorta and sac. Sac had glistening inner surface.
26. BOSTRÖM * Cases 3. *Ibid*, p. 42.	F. 37	1 cm. above the valves.	Long, reaching from the origin of the 5th to the level of 8th intercostal arteries.	(1) Six months. (2) Dyspœna, œdema, albuminuria.	Ascending aorta smooth, descending extensively sclerosed with a few calcareous plaques. Sac had glistening but nodular inner surface resembling a greatly sclerosed aorta. Sac passed down to base of aortic valves. 3rd, 4th and 5th left intercostals given off from sac.
27. FISCHER, F. * *Inaug. Diss. Marburg*, 1894. Case IV., p. 18	—	1 cm. above coronary art.	? Some point below the intercostal artery.	(1) ——— (2) ———	From a dissecting room subject. Intima of aorta only slightly thickened, media unaffected. Intima of sac smooth with flattened plaques of various sizes.

CASE.	AGE AND SEX.	PRIMARY RUPTURE.	PLACE OR PLACES OF RE-ENTRANCE.	(1) DURATION. (2) CAUSE OF DEATH,	REMARKS
28. FISCHER, F. * *Ibid*. Case IV., p. 21.	M. 57	2 cm. above aortic valves.	At level of renal arteries and into right carotid about 3-4 cm. from origin.	(1) 3 years. (2) Dyspnœa, emphysema, renal disease, œdema, sudden death.	Atheroma of aortic intima, with occasional plaques of thickening. Intima of sac of irregular thickness, but glistening. All the intercostals given off from sac
29. AUTHOR'S First Case...........	M. 64	1¼ in. (3·25 cm.) above origin of cœliac axis.	Lower end of rt. external iliac and origin of left femoral.	(1) More than eleven months. (2) Sudden death.	Nodose arterio-sclerosis of aortic intima of hyaline fibroid type. Several lumbar intercostals given off from the sac. Accessory recent communication at origin of right renal.
30. AUTHOR'S Second Case..... ...	F. 48	3 cm. above cœliac axis.	No orifice of re-entrance.	(1) Eleven months. (2) Rupture of aneurysm of sup. mesenteric.	Nodose arterio-sclerosis of aortic intima of gelatinous appearance. Sac almost filled with firm mass of clot, on removal of this smooth intima disclosed.

CASES APPARENTLY OF THE SAME NATURE, BUT CONCERNING WHICH THE INFORMATION GIVEN IS INCOMPLETE.

CASE.	AGE AND SEX.	PRIMARY RUPTURE.	PLACE OR PLACES OF RE-ENTRANCE.	(1) DURATION. (2) CAUSE OF DEATH.	REMARKS.
31. GORDON * *Proc. Path. Soc.*, Dublin, 1863-4, II., p. 84.	M. 50	Near origin of aorta	Left common iliac (?)	15 days. Paralysis of legs, gangrene and dysentery.	Complete separation of coats.
32. KNOTT * *Ibid*................		Junction of transverse and descending aorta.	Termination of both common iliacs.		Dissecting-room case. Like "double-barrelled gun."
33. EDWARDS AND STONE * *Trans. Path. Soc.*, Philadelphia, VI., 1878, p. 38..................	M. 46	Abdominal aorta. (no description.)	Not mentioned, apparently wanting.	(1) More than 18 months. (2) Progressive emaciation.	Pain in left hypochondrium and lower dorsal region. Aorta highly atheromatous. Sac large and distended, filled with highly organized blood clot. Report of morbid growths committee "a dissecting aneursym."
34. OLIVER, T. * *Lancet*, I., 1892, p. 1068....................	M. 55	(1) ½ in. before origin of innominate. (2) Junction of transverse and descending aorta.	Right carotid artery. (?) 2 in. above bifurcation of aorta.	At least 17 months.	Description given very incomplete and unsatisfactory; from clinical history evidently of long duration. Innominate artery dilated and thrombosed (old thrombosis). R. carotid completely blocked, blood circulating through dissecting aneurysm.
		(2) Bifurcation of rt. common iliac.	Passed upwards to bifurcation of aorta (?) opening.		Common iliac distended and thrombosed.
		(3) Upper part of left external iliac.	Passed upwards to bifurcation of aorta.		Left iliac artery extremely atheromatous, containing small calcarous plates.
35, ELSWORTHY *Brit. Med. Jour.*, 1896, I., p. 398.........	M. 51	1 in. above valves.	? Left external iliac 1 in. from origin.	(1) 4½ years. (2) Rupture of sac into pericardium.	Aorta atheromatous.

REPORT ON
A YEAR'S WORK IN BACTERIOLOGICAL DIAGNOSIS OF DIPHTHERIA.[1]

BY

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Until a year ago no considerable number of bacteriological examinations had been made of diphtheria cases in Montreal. During the twelve months ending March 31st, 1896, there were sent from the two laboratories of which I have charge, 998 samples of exudation examined as to the presence of the diphtheria bacilli. Of those 528 were examined at the Provincial Board Laboratory, including samples from all cases admitted into the diphtheria wards of the Catholic section of the Civic Infectious Hospital, and 470 at the General Hospital Pathological Laboratory, including samples from each case admitted as diphtheria into the Protestant section of the Civic Hospital.

The examination was made by me personally in 729 cases. The remainder were examined by either Dr. J. E. Laberge (128), Dr. W. H. Jamieson (89), Dr. J. A. Williams (5), or the late Dr. E. P. Williams (47), who at one time or another kindly undertook my work during my illness or absence.

Methods—The methods followed were in the main those adopted by the New York Board of Health, which was the first sanitary body to introduce a system of wholesale bacteriological examination in diagnosing diphtheria. The fact that this precedent has been followed within two years by the establishment of similar services in many large American and European towns, and that in no case have any very important modifications or improvements been introduced, speaks volumes for the efficacy of the system originated by Drs. H. M. Biggs and W. H. Park.

The Board of Health of the Province of Quebec considered that cheap card-board boxes which could be destroyed when once used would be preferable to the more elaborate outfits in use elsewhere, and in view of the greater uniformity of results obtained the Board has only issued outfits with swabs, the cultures being made in the laboratory. Suitable blanks for filling in reports are sent out with each outfit and these outfits are left at pharmacies conveniently situated for all parts of the city. The fact that the service was a provincial and not a municipal one made it necessary that we should not attempt to do more for Montreal than we were prepared to do for the entire province, and therefore the enforcing of quarantine and local notification arrangements are not attempted, nor is a daily collection made from the depots, as should certainly be done in the case of a municipal diphtheria service.

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[1] Read before the Montreal Medico-Chirurgical Society, April 3rd, 1896.

Unfortunately the absence of permission to use the mails for transmitting samples of throat exudate has made it difficult to get samples to the laboratory in time for sending a report on the following day, and this has often prevented physicians from availing themselves of the facilities offered by the Provincial Board of Health

Preparation of the medium[1]—I have employed throughout Lœffler serum, made by adding $\frac{1}{6}$ volume of alkaline, 1 p.c. peptone, 1 p.c. glucose beef broth to ox-blood serum, simultaneously sterilized and coagulated in a water oven. (Hueppes method.) This medium gives a good growth at the end of 12 to 14 hours. The trouble and delay of frequent visits to the abattoir has been avoided by preparing large quantities of the serum at a time, adding with the glucose bouillon as a preservative, 1 to 2 per cent. chloroform and keeping it in self-sealing preserve jars until required for filling the tubes. I have used this method (suggested originally by Koch) since 1892 with very satisfactory results, and have still a reserve supply of serum kept by this means in ordinary corked vial's since 1892, which was recently tested and found to yield a satisfactory medium.

It may be well to mention that if the serum contains much blood this will form a compact layer over the chloroform in the bottom hence it is better to shake the jar occasionally during the first few days.

By wrapping tin-foil round the tops of the tubes and dipping them into paraffin, they may be kept indefinitely without drying up. The tin-foil prevents the paraffin from entering the cotton wool. I owe the suggestion to Dr. Adami.

Method of taking samples—A small galvanized iron rod with a piece of cotton wool is twisted round the end sterilized and placed in a sterilized tube, enclosed in a card-board box, with directions for use, forms the outfit of the Provincial Laboratory. In the case of the General Hospital Laboratory, a serum tube, for making the culture at once, is sent with the swab.

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[1] Hard boiled eggs have been used as a culture medium from time to time when we happened to be short of serum in the laboratory, but I found they require more time and skill in order to properly make culture than is the case with the serum sterilized in tubes.

It is better not only to rub the surface of the exudate with the swab, but also to pass the swab along under one edge of the exudate Mac Collum), as bacilli may sometimes be met with in this situation after they have disappeared from the surface. In cases of laryngeal or nasal diphtheria, the bacilli are usually present in the mucus on the posterior wall of the pharynx. In case of negative results innoculation should be made, if possible, with pieces of membrane. It must be borne in mind that in some cases of diphtheritic croup, the bacilli may only appear late in the disease.

The use of ordinary cotton wool (as recommended by Shuttleworth) is preferable to absorbent cotton. The swabs should be thoroughly sterilized before use.

The result of the examination is communicated by mail, and also by telephone if desired, by noon on the day following the receipt of the swab at the laboratory.

In the cases of an anomalous growth or none at all on the serum, I have been in the habit of examining the swab microscopically, but my experience is in accord with that of Park, that the routine examination of the swab in all cases seldom gives additional information or enables a certain conclusion to be arrived at earlier than by the ordinary culture methods. The direct microscopic examination is a work which falls within the province of the clinician rather than of the laboratory bacteriologist.

I have tabulated 882 samples received during the twelve months ending March 1, 1896. Of these 572, or 64 per cent., were primary examinations or first samples and 310 secondary samples examined subsequently, either to determine when the throat became clear from bacilli in the genuine cases, or for the further study of doubtful ones.

Of 572 primary samples, 321 (56 per cent.) gave positive results ; 189 (33 per cent.) negative results, and 52 (11 per cent.) doubtful results. So that we had to deal presumably with rather more than 321 cases of genuine diphtheria.

The relative frequency of mixed infection is shown from the following table of primary samples :

Klebs-Lœffler bacilli in pure culture	43	per cent.
" " with streptococci	15	"
" " with staphylococci and streptococci	13	"
" " staphylococci alone	10	"
" " pneumococci	5	"
Short bacilli and other combinations	4	"
	100	

Unfortunately I had no opportunities for determining the relative mortality of the different associations and my information as to the relative benefits from antitoxin in each is too fragmentary to have any value.

Persistence of Infection in the Throat—Of 310 re-examinations or secondary cultures, made to see whether the bacilli had disappeared from the throat in the later stages or in the event of a doubtful result in a primary culture, 145 or 47 per cent. gave positive results. Among these there was only one case (E. C.) where the bacilli were missed at the first examination and found subsequently. This was a case of laryngeal diphtheria following pharyngeal, where the case was first examined bacteriologically on the ninth day of the illness. As a rule the bacilli become scanty in a membrane that has been formed more than four days, though in some cases they were abundantly present for several weeks after the disappearance of the membrane, and in two cases virulent bacilli were still present four weeks after the throat had been quite free from membrane.

On the other hand, they were absent in about one-half the cases by the third day after the disappearance of the membrane, corresponding with the statement made by Park. Under these circumstances the advantages of a quarantine regulated by bacteriological examinations over one with an arbitrary time limit is obvious.

In cases treated with antitoxin the bacilli persisted as long in the throat as those treated without antitoxin. Personally, from what is known of the biology of the diphtheria bacillus and especially its tendency to die out or fail to increase in the presence of very weak acids, I should favour some mild treatment by lozenges or confection containing a weak organic acid, such as citric acid, by which an acid condition of the fauces could be kept up would be the most promising way of getting rid of the bacilli, but I have had no opportunity of testing this. I notice also that no note is made of the reaction of the fauces with reference to the persistence of bacilli.

Significance of Negative Results—With regard to the significance of a negative result, it depends altogether upon the stage at which the sample is taken. In case of negative results we have always requested the sending of secondary samples if anything in the course of the case tended to show that the case was really diphtheria. The result in these cases was almost universally negative. Out of 189 cases with negative results I have been able to hear of but two cases, where a visible membrane gave negative bacteriological results in the early stage, being followed by diphtherial paralysis.

The chief difficulty to the bacteriologist in interpreting these negative results is the absence of certain information that the sample has been properly taken. The occurrence of diphtherial paralysis

I regard as conclusive evidence that the case was really diphtheria. When the clinical diagnosis is positive I think that even after negative bacterial results, samples should be taken at intervals of a day or two in case of a re-infection. In any case, a negative result shows that the exudate is not at the time in a state likely to spread infection.

It was not found, as a rule, that the taking of duplicate samples at the same time gave any additional information, though in one case bacilli were absent in one sample and present in a duplicate taken at the same time. Additional samples taken after an interval of 12 to 24 hours were more often of service.

In any case where the patient has been ill for four or five days the absence of bacilli in the cultures, even from visible membrane, should not be considered as proving that the case is not one of diphtheria. When the sample is taken from cases with no visible membrane the negative results are less trustworthy, but as a rule in cases of croup the posterior wall of the pharynx gives an abundant growth of diphtheria bacilli. Some throat swabs taken from fatal cases of croup not diagnosed during life were found to give positive results, a method which might be made to yield valuable statistical information in a properly managed system of death certification. The fact that so-called simple croup is credited with causing in Montreal double the number of deaths due to typhoid should make this question worth investigation.

Doubtful Results—In 11 per cent. of the primary cases the results of the first culture were not decisive; of these 1 per cent. showed entire absence of growth, due to the use of antiseptic applications shortly before taking the sample. Sometimes organisms, apparently characteristic Klebs-Lœffler bacilli, were present in such small numbers that they did not correspond with the known tendency of diphtheritic bacilli to rapid growth as compared with other organisms. In such cases a second culture was uniformly asked for and obtained, but it was just as uniformly negative, except when obtained in the late stages. If one is sure that the sample, properly taken from visible membrane in an early stage, gives negative results, there is very little danger of the case being diphtheria. With regard to the late cases in which few bacilli are met with, it is likely at all events that the danger of infection will be as slight, so long as the bacilli are scanty in the exudate.

The routine advice has been to keep such cases isolated and send further samples. In case they are exposed to danger of infection from undoubted cases of diphtheria, or removed to an infectious hospital, a small dose of antitoxin would confer immunity. This power of immunization offsets to some extent the lack of any proper isolating wards for observation of doubtful cases in our contagious hospital. With a scanty growth of suspicious looking bacilli, I am inclined now to look upon the case as probably not diphtheria, if in an early, or probably not highly infectious if in a later stage. As severe angina so often proves to be a manifestation or complication of scarlatina or some other exanthem, I favour isolation in a fever hospital, if not obtainable otherwise, as being the safest plan for the public safety. The clinical course of these cases, however, often shows them to be tonsillitis by the end of 24 or 48 hours. My experience of such cases has been decidedly that they are not infectious. They usually improve suddenly if left to themselves, and so if a dose of antitoxin happens to be taken this may create the impression that the case was really diphtheria. The absence from the cultures of a sufficient number of streptococci to explain the condition of pseudo-membranous angina is suspicious of diphtheria, as most of the non-diphtheritic anginas are due to streptococci. As I have information about several cases, not diphtheria, benefited by antitoxin, I think its employment in all doubtful cases should be the rule if the symptoms are grave, especially if there are evidences of croup. Our experience in the Hospital laboratory has been that an unusual number of doubtful results were found in connection with private cases. It was the rule in such cases to find a considerable number of suspicious looking bacilli in many cases which we did not consider to be diphtheria. The only explanation which suggests itself to me is, that the samples were taken in these cases with unusual care, and an unusually liberal amount of the exudate was smeared on the culture media, and that under these circumstances a certain amount of growth in the natural secretions of the pharynx may have been possible with germs which do not grow on Lœffler serum. Sometimes, where the growth was scanty, portions of the exudate itself would be removed from the serum in examining the culture. The presence of bacilli in the exudate, which do not grow on the media, is against the probability of diphtheria.

An abundant growth is sometimes found of a bacillus which does not have the typical characters of Klebs-Lœffler bacilli.

These cultures constituted between 1 and 2 per cent. of all the samples examined and were extremely puzzling. They usually occur in groups, and are associated with contact or exposure to genuine diphtheria. None of them were fatal in my experience, though two or three were followed by pharyngeal paralysis. The membrane formation was described as not being typical but usually thick and pultaceous, and in some cases no distinct membrane was formed.

In one such case, the rather large organism met with grew on potatoes as a distinct white colony, excluding it from the category of Klebs-Lœffler bacilli. It killed guinea pigs by septicæmia without the characteristic hæmorrhagic infiltration of the diphtheria bacilli.

In the case of genuine diphtheria bacilli, a certain proportion of the rods stain intensely, almost black, with warm carbol fuchsin. In the case of the pseudo-forms this was not the case, the staining being more uniform and much fainter.

In another case an organism forming long rods was obtained in pure culture and killed guinea pigs in the typical manner with the characteristic lesions.

In a third case, without any diphtheritic membrane, an organism was met with which was twice as long and thicker than the Klebs-Lœffler bacillus in the first culture, but on making sub-cultures in successive generations became typical, and later on showed typical growth from secondary throat cultures.

This tendency of bacilli, when in considerable amount in the first cultures, to revert to the well-known Klebs-Lœffler type in sub-cultures and their tendency to show virulence to guinea pigs, has made it hard to decide that any bacillus is not Klebs-Lœffler bacillus if it is found in abundance in a primary culture, no matter how far it may be removed from the orthodox standard morphologically.

The most satisfactory mode of procedure is, of course, the inoculation of guinea pigs, but to do this properly involves delay. In the first place, the original throat cultures are nearly always too thickly sown to allow of the immediate isolation of pure cultures without preliminary separation upon surface of serum tubes, which means usually a delay of a day. When a pure culture is obtained conclusive results can only be assured by inoculation of a bouillon culture, which means a delay of one or two days more. Finally, if the full degree of virulence is not present, the animal may take two or three days to die. In any case, as pointed out by Roux and Yersin and by Park, the fact that one colony grown from a sample is not virulent, does not show that another of the same bacillus from the same case may not be, as the virulence of different colonies, even in the same case, has been shown to vary greatly. The formation of acid or alkali can be more readily determined, but also requires isolation of pure cultures in order to be used.

The delay and trouble attendant on this test by inoculation contrasts very unfavourably with the convenience and rapidity of the rest of the technique for quarantine purposes. I have obtained more satisfactory results from simply making secondary cultures; it will be found either that the bacilli are absent from the cultures or that more typical forms are met with.

Where there is definite growth of bacilli from the throat, the case should be provisionally regarded as one of diphtheria until shown to be otherwise, whether the clinical symptoms and the morphological characters are typical or not, as the tendency to variability is far more distinctive of the diphtheria bacillus than any one of the forms in which it occurs.

Visible growths on acid potato, or motility and formation of alkali are sufficient to characterize any organism showing them as something else than the Lœffler bacilli.

Significance of Positive Results.—When a typical heavy growth of a bacillus, corresponding in appearance with the Klebs bacillus, is met with, there need be no hesitation in declaring that the conditions for diphtheritic infection are present, whether the clinical symptoms correspond or not, and whether there is visible membrane or not.

Of the 293 primary samples examined at the Provincial Board of Health Laboratory, 43, or 13 per cent., were from cases diagnosed clinically as follicular tonsillitis, quite apart from a number more where the diagnosis was stated to be possibly or probably diphtheria. Of these 43 cases diagnosed as tonsillitis, 19, or 45 per cent., were shown to be diphtheria. This result was confirmed by inoculation experiments in a number of my earlier cases, the result being uniformly positive in every case where it was tried. This experience tends to shake one's confidence considerably as to the efficiency of the diagnosis of tonsillitis from diphtheria without making cultures. As to the recognition of diphtheria from tonsillitis, of 293 primary samples sent to the Provincial Bacteriological Laboratory, only 173, or 59 per cent., gave positive results, and of 279 primary specimens sent to the pathological laboratory of the Montreal General Hospital only 148, or 53 per cent., gave positive results. Possibly many of these were only sent as an additional precaution in cases clinically considered as tonsillitis, but we found that cases called follicular tonsillitis were really diphtheria 45 times out of 100.

We may assume that when a patient is sent to a diphtheria ward in an infectious hospital some good grounds exist for diagnosing the case, but in the case of the Catholic division of the infectious hospital of 73 primary samples from cases sent as diphtheria, only 46, or 66 per cent., showed the presence of diphtheria bacilli, while 25 or over showed none.

In the case of the Protestant section of 92 primary samples, 81, or

87 per cent., showed the presence of diphtheria bacilli and 11, or 13 per cent., showed none. The difference between the results of the two sections appears to be due to the fact that a preliminary bacteriological examination was made in a large number of patients at the Montreal General Hospital before forwarding cases recommended for admission as diphtheria.

From the above, I have omitted from the negative result in each division, two patients admitted in the paralytic stage of undoubted attacks of diphtheria, but from whose throats the bacilli could no longer be obtained.

The results go to show the advisability of making, whenever possible, preliminary bacteriological examinations of cases before sending them to the infectious hospitals, and also of providing properly isolated observation wards in the infectious hospitals for the reception of doubtful cases. A precautionary immunising dose of serum will considerably lessen the danger of an infection resulting from mistakes in diagnosis, but it will not wholly guard against it as I have met with several instances of diphtheria infection, confirmed by bacterial examination, among persons supposed to be protected by doses of the antitoxin.

Accuracy of Various Methods of Diagnosis.—The delicacy of the positive clinical diagnosis of diphtheria has been seen in our 572 cases to be somewhat over 60 per cent. The bacteriological diagnosis has, in my experience, shown an accuracy of somewhat over 90 per cent., that is to say, a doubtful opinion had to be given in one case out of every ten primary samples examined, and the subsequent course of the cases usually showed them not to have been diphtheria. The chief difficulty in giving a diagnosis is the uncertainty from not having personally made the cultures.* I found a greater uniformity of the results in the Provincial Laboratory where all the tubes are inoculated by one attendant who strictly followed my instructions, than in the hospital laboratory where they were made by various physicians.

Probably had specimens been indiscriminately sent me in all cases the percentage of genuine cases would have been greater, but naturally one had a preponderance of the obscure cases as, by some physicians, samples were only sent from those which were puzzling.

The positive results were equally frequent in the case of the hospital cases, where cultures were made at once on serum and forwarded to the laboratory, and in those of the Provincial Laboratory, where the swabs were sent to the laboratory and the culture made as a rule only after several hours delay.

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*. In one case shown by autopsy to be laryngeal diphtheria a physician inoculated a tube which gave negative results. A few hours later in performing a tracheotomy on the same case he accidentally inoculated his own hand, producing a sloughing wound from which we obtained a pure culture of Klebs Lœffler bacilli.

Diphtheria Bacilli in the Throat of Apparently Healthy Persons—The occasional occurrence of bacilli, like the diphtheria bacillus, so-called pseudo-diphtheria bacilli, in the throat of apparently healthy persons appears to have received an undue amount of attention with reference to its practical bearing upon the diagnosis of diphtheria. These bacilli have very seldom been met with in the overwhelming numbers which characterize the early stages of diphtherial infection, and therefore are not likely to give rise to serious errors of diagnosis in cases examined early.

On the other hand, it has been abundantly demonstrated that the virulent diphtheria bacilli may exist in large numbers in the throat of persons who are apparently healthy and who certainly do not present any of the clinical features of diphtheria, and this important discovery viewed in its true light should materally influence one's course in dealing with outbreaks of this disease in households or public institutions such as schools, hospitals and asylums.

Instead of isolating and examining bacteriologically only those cases which have sore throat, all the throats in the institution or household should be examined bacteriologically and those persons from whom a culture of diphtheria bacilli is obtained should be isolated and quarantined, whether they are ill or not, until no bacilli are found in the throat cultures.

This is probably the explanation of the difficulty often experienced in preventing the spread of diphtheria in households or public institutions, even after all persons actually ill have been rigidly quarantined.

Attention to this mode of infection by the New York Board of Health has led to most satisfactory quarantine results, and Aaser, of Copenhagen, has recently reported an outbreak in a cavalry regiment which continued to spread after all the sick persons had been isolated and thorough disinfection performed, and was only controlled when 19 persons, apparently healthy, but whose throats furnished growths of diphtheria bacilli, were quarantined.

Use of Antitoxin.—The twelve months under consideration, cover pretty accurately well the first twelve months' experience with the use of antitoxin and therefore the first years in which a specific remedy was available for the treatment of this disease. It is of special interest to study the frequency of diphtheria in the city during this period and see what effect this new remedy, whose efficacy is undoubted, has had upon the diphtheria death rate.

From the records at the City Health Office, to which Dr. Laberge, City Health Officer, kindly gave me access, I find that during the period in question 849 cases of diphtheria and diphtheritic croup were reported at the health office, besides 83 cases reported as simple croup.

The mortality from diphtheria and diphtheritic croup was 282, and in addition there were 100 deaths from so-called simple croup. Probably three-fourths of the cases of this latter disease were really diphtheria. In Montreal the term of "simple croup" was recently invented to cover obscure throat cases in which notification is permissible but not obligatory, in the hope that it may lead to cases being reported which would otherwise not be heard of. If the cases thus reported were examined bacteriologically valuable information would be obtained. The deaths registered under this heading, in spite of its harmless and reassuring sound, are twice as many as those occurring from typhoid fever in Montreal.

The total mortality for diphtheria and croup was thus in the neighbourhood of 400 for the twelve months under consideration and double that observed in any one year since 1888, the mortality from diphtheria and croup in the intervening years being as follows; 1888, 427; 1889, 200; 1890, 170; 1891, 78; 1892, 54; 1893, 65: 1894, 99; 1895, 419.

Without going into the proportion of the deaths in the different years to the increasing varying population of the city, I wish to call attention to the fact that during the first year of the antitoxin treatment, and in spite of the fact that this treatment was very generally carried out in private patients who could afford it and among hospital patients who get it without paying, and while special statistics show a decided lowering in the death rate, nevertheless in Montreal, twice as many persons died from diphtheria during 1895 as during any of the previous six years. This probably does not depend at all upon any better enforcement of notification in diphtheria cases, as it includes both diphtheria and croup.

My reason for emphasizing this is to show that the rigorous enforcement of the standard quarantine measures of isolation and disinfection is not rendered less necessary by the introduction of the new specific remedy. Indeed I consider that by converting a severe disease into a mild one the tendency of the patients to go about before the danger of infection had disappeared must be increased to an extent which offers a new element of danger, unless quarantine is very strictly enforced. Even physicians hardly realize the necessity of enforcing a tedious quarantine and isolation for what has apparently been trivial illness which improved promptly under antitoxin.

Another matter which calls for notice is the practice of withholding antitoxin until the diagnosis of diphtheria is clear. Probably a large proportion of the deaths from diphtheria arose from delay in the use of this remedy. One would think it better that the remedy should be given ninety nine times to persons not having diphtheria than to omit it in one genuine case.

I was often told that a report was wanted in order to determine whether it is necessary to use the antitoxin or not. The invariable answer has been not to delay the administration of antitoxin for a bacteriological report if the case is at all urgent. Although the coincidence of the discovery of this remedy has led to an increased interest in the diagnosis of diphtheria, the unavoidable delay of 15 to 24 hours makes it inadvisable to delay a preliminary " protective " dose of the remedy until the diagnosis has been confirmed. In any case, observations have shown marked benefit in certain forms of angina solely due to staphylococci and streptococci when diphtheria bacilli were found to be absent.

Conclusions.—1. The culture method enables a positive diagnosis to be made in 90 per cent. of all cases of diphtheria when seen early.

2. The significance attaching to a negative result depends entirely upon the length of time which has elapsed since the onset of the disease, and the absence of bacilli from a case which has lasted often four or five days does not prove that it is not diphtheria ; in any case where the course of disease makes it likely to be diphtheria, repeated re-examination should be made.

3. In severe cases of suspicious angina, it is advisable not to delay the preliminary dose of antitoxin in order to learn the result of the bacteriological examination.

4. The greatest value of the bacteriological examination is in determining the necessity and the duration of isolation and quarantine, and if cases continue to appear, the throats of all persons exposed to contagion should be examined whether they show signs of disease. or not. A swabbing to be taken post-mortem in all cases of death from croup.

5. The patients should not be released from quarantine and the final disinfection of the premises should not be done until the bacilli have disappeared entirely from the affected part.

6. The bacilli have been shown to infect articles of clothing, furniture, etc., and these should be thoroughly disinfected, preferably by steam under pressure, and solutions of mercuric chloride. Fumigation by sulphur is unreliable in the majority of cases as commonly carried out.

7. Cases showing a heavy growth of bacilli, on serum at 20 hours, not quite of the typical Klebs-Lœffler type, should be regarded as suspicious and strictly isolated until their non-diphtherial nature is clear. In order to avoid the conflict between the opinions of the medical attendant and the bacteriologist, it is preferable when a case is diagnosed clinically as non-diphtheritic shows a growth of bacilli, that the further tests of acid production and pathogenes is to be applied, the medical attendant being informed of the suspicious nature of the case and of the necessity of isolation pending more thorough bacteriological study. This would remove a common cause of friction between the medical attendant and the Health Officer and lead to the more careful study of the doubtful cases.

8. In spite of the use of antitoxin and the great benefits resulting from it, the mortality of diphtheria has greatly increased in Montreal during the past year.

RETROSPECT

OF

CURRENT LITERATURE.

Medicine.

Cardiac Complications in Gonorrhœa.

HIS. "Ueber Herzkrankheiten bei Gonorrhœ."—*Berl. Klin. Woch.* 1892, 993.

LEYDEN. "Ueber Endocarditis Gonorrhoica."—*Deut. Med. Woch.*" 1893, 909.

COUNCILMAN. *Amer. Jour. Med. Sci.*, 1891, 1.

DAUBER AND BORST. "Maligne Endocarditis im Auschluss au Gonorrhœ."—*Deut. Arch. Klin. Med.*, 56, 231.

THAYER AND BLUMER. "Ulcerative endocarditis due to the gonococcus; gonorrhœal septicæmia."—*Johns Hopkins Hospital Bulletin,* April, 1896.

Until recently gonorrhœa has been regarded as a local disease. With the exception of arthritis the local manifestations only have attracted attention and visceral complications, although occasionally referred to, have not been generally recognised. The discovery of the specific micro-organism of the disease has, however, directed attention to certain secondary lesions, especially in the heart, and the demonstration of the gonococcus in distant parts has shown that a broader view of the disease must be taken than formerly.

Owing to the occurrence of arthritis the heart has been subjected to careful examination by all clinicians, and it has been very generally recognised that endocarditis very seldom occurs. Indeed, it is usually laid down as a diagnostic rule that the presence of a murmur is a point against the gonorrhœal origin of any given case of arthritis. Whilst this rule still holds in the majority of instances, numerous cases now recorded force us to recognise the fact that endocarditis may occur in gonorrhœa, either associated with arthritis or less commonly in its absence. Myocarditis and pericarditis are also complications which occur, although less frequently than endocarditis.

The demonstration of the gonococci in the myocardium (Councilman), and also in the valves in endocarditis, completes the proof of the relationship between gonorrhœa and the cardiac affections occurring in this disease.

Unfortunately almost all writers on this subject rely on the anatomical reactions of the gonococcus for its identification. Cultures have either been omitted at the autopsies or have proved negative, owing to difficulties of growing the organism on culture media. Thayer and Blumer have, however, succeeded in obtaining a pure culture of the gonococcus in a case of fatal gonorrhœal endocarditis. Streptococci and staphylococci have been found in the secondary lesions of gonorrhœa as the result of a mixed infection.

Many of the reported cases of endocarditis have resulted from a very mild attack of gonorrhœa and have appeared after the visible purulent discharge was arrested. Both the benign and ulcerative type of endocarditis have been recognised, the latter being much the rarer of the two. From an etiological standpoint the ulcerative cases are the more important, as it is only in them that the final pathological proof can be obtained.

The symptoms do not differ from other forms of ulcerative endocarditis and the diagnosis is based on local evidence of valvular disease, fever, rigors, emboli in the various parts of the body, nephritis and splenic enlargement.

In His's case the first symptom was a slight syncopal attack coming on seven weeks after the onset of a mild attack of gonorrhœa, in which the discharge lasted only four weeks. A few days later fever, rigors and urethral discharge appeared, and during the week ensuing a cardiac murmur, capillary hæmorrhages on the soft palate and a macular rash resembling a syphilide made their appearance. The temperature was remittent, profuse sweating and a cutaneous hæmorrhage with an anæmic centre (infarct) also developed, and death occurred two months after the onset of the gonorrhœa.

At the autopsy ulcerative endocarditis of the aortic valve and a softening puriform thrombus was present in the left ventricle. Gonococci were present in the cardiac vegetations, but were absent in the infarcts, in the spleen, kidney and lungs.

The pelvic plexus was found thrombosed and a hæmorrhage was present in the testicle, neither of these conditions presenting symptoms during life. Polyuria and central deafness which were noted during life were correctly referred to embolism of the medulla.

Leyden's case was preceded by a gonorrhœal arthritis, and proved fatal about a fortnight after the first physical signs of cardiac disease developed. The diagnosis rested on the local physical signs of cardiac disease, irregular fever with repeated chills, vomiting, nephritis and the rapid and malignant course of the disease. Gonococci were found in the valves but no cultures were obtained.

Dauber and Borst's case, in addition to certain local complications, presented a tendo-vaginitis of the hand (gonorrhœal ?) and myositis abdominalis (gonorrh.? rheumatic ?).

Three weeks after the onset of urethritis the patient had a rigor, remittent fever and an enlarged spleen, and later evidences of regurgitation and nephritis. A terminal pneumonia developed.

At the autopsy bacteria were found in pairs resembling gonococci in being within the cells, and in being decolourised by Gram's method and by alcohol. Of a number of cultures one only succeeded, showing diplococci of precisely the same anatomical and staining characters as those in the valves. The culture, however, was clearly not one of Neisser's gonococcus owing to the absence of outgrowths or daughter colonies at their borders, a character which is so characteristic of the gonococcus.

The authors therefore conclude that the endocarditis was produced by a micro-organism resembling Neisser's gonococcus, but distinct from it, as shown by the culture. They regard the urethra as the origin of the infection, owing to the absence of any other source.

Although not denying the probability of gonorrhœal endocarditis, they demand the identification of organisms by cultures as well as by microscopic and staining reactions.

Thayer and Blumer's case is the most important and conclusive yet published. The patient, a woman of 34, had rheumatism three months before admission, but stated that the joints were not swollen and that she was confined to bed for ten days only.

When examined she was a trifle cynotic ; pulse small, 132 ; temperature 102.2° The apex beat was in the nipple line ; a systolic and presystolic murmur and thrill were detected at the apex. Splenic enlargement and albuminuria were present.

During the illness there was fever with irregular exacerbations of temperature and rigors. The patient became much emaciated and sallow ; death occurred about three weeks after admission.

At the autopsy ulcerative endocarditis of the mitral valve, with large vegetations projecting into the auricle, was found, together with splenic enlargement, acute and chronic nephritis and infarcts of the spleen and lung.

Gonococci recognised by their microscopic and staining reactions were found in the vagina and in the cardiac valve, but were absent from the organs.

Cultures from the heart proved negative, owing to the absence of proper media, but blood drawn from the median vein during life and mixed with agar showed typical growths of gonococci. This medium owing to the large amount of blood employed was peculiarly favourable to the growth of the organisms. The cultures further resembled gonococci in not developing in transplantation to ordinary media and in their microscopic and tinctorial characters.

The authors conclude that the organism found in pure culture in the blood and the micrococci on the affected valve were the gonococci of Neisser.

1. Its form and arrangement were identical.
2. While present free the cocci were frequently found crowded in the protoplasm of leucocytes in the thrombus in the mitral valve.
3. It refused to grow on the ordinary media.
4. It grew readily upon a mixture of human blood and agar-agar (one-third blood).
5. It decolorized with Gram's method.

Cure of a Case of Pseudo-Leukæmia.

MORITZ KATZENSTEIN. "Cure of a case of pseudo-leukæmia by subcutaneous injections of arsenic."—*Deutsch. Arch. Klin. Med.*, 56, p. 120.

That arsenic exerts a remarkably beneficial effect on many cases of Hodgkin's disease is very generally admitted. Under its influence the anæmia and general health of the patient often improve rapidly and diminution in the size of the glands is also observed. Unfortunately, however, this improvement only continues to a certain point and relapses occur which ultimately prove fatal.

The case reported by Katzenstein is therefore of unusual interest, inasmuch as complete recovery ensued. The patient, a man aged 37 years, came under observation in January, 1894, stating that a general glandular enlargement had been present for two months. He had also suffered from weakness and he was cachectic and emaciated. The inguinal glands were most enlarged, reaching the size of the fist, whilst the axillary, cervical and cubital glands were also increased in size. There was a diffuse bronchial catarrh and splenic enlargement. The blood count gave 4,720,000 red and 12,200 white cells. Epistaxis and œdema of the lower extremities were also noted.

Arsenic was given subcutaneously in the form of Fowler's solution, beginning with a dose of 1½ mm. and gradually increasing to 15 mm The treatment was continued for six months, during which time all evidences of the disease disappeared. The glandular swelling and splenic enlargement completely disappeared; the appearance of the patient assumed that of health and there was a complete recovery of bodily strength.

The case is reported five months after the cessation of treatment, and although the criticism may be offered that the time is rather short to be sure of a permanent cure, still such a brilliant result is very unusual.

The patient seems to have experienced no inconvenient local results from the use of Fowler's solution. For hypodermic use a 1 per cent. solution is certainly much less irritating and less liable to produce painful local swellings.

F. G. Finley.

Surgery.

Method of Operating in Appendicitis.

WHITE. "Should the appendix be removed in every case of appendicular abscess."—*Annals of Surgery*, June, 1896.

MCBURNEY. "Transactions of the section on general surgery of the College of Physicians of Philadelphia."—*Ibid.*

The writer, after mentioning several points which still admit of legitimate differences of opinion, discusses this question at considerable length. In the cases where the operation is undertaken early, that is before the third or fourth day, there is rarely any doubt about the propriety of removing the appendix, but when we come to the later cases, where a strong wall of adhesions has been formed about the abscess, the case is not so clear.

Some surgeons would remove the appendix in every case, fearing either a return of the disease or a fæcal fistula. The views of a number of surgeons are quoted, and all are strongly of the opinion that in certain cases it is not well to disturb things too much, but to be content with draining the abscess cavity, cleansing and packing it with iodoform gauze, rather than run the risk of infecting the general peritoneum by more radical methods. The writer sums up as follows: "Every medical man knows of the inflammatory obliteration of mucous channels, of the retrograde metamorphosis and disappearance of infected sloughs, or of their fibroid transformation into cicatricial tissue; of the shutting in of abscess cavities with infected walls, and of the coincident death of the bacteria therein as the supply of pabulum is cut off; of the spontaneous healing of fæcal fistulæ. On the other hand, most surgeons of to-day have knowledge of cases in which patients with almost purely local symptoms, in excellent general condition and with distinctly circumscribed abscess, have died of general peritonitis within forty-eight hours after the removal of a deeply-imbedded and adherent appendix."

In the discussion which this paper evoked Dr. McBurney mentioned two classes of abscesses which may be met with as a result of suppuration about the appendix. In one the pus has already approached the anterior abdominal wall and the abscess can be evacuated without opening the general peritoneal cavity. If, in such a case, the appendix forms an integral portion of the barrier which protects the peritoneum, no manipulation should be practised. The other form of abscess admits of different treatment. Here the pus and appendix are surrounded by coils of intestine, and the whole mass lies back in the abdomen away from the anterior abdominal wall. Here one must open the general peritoneal cavity as a first step. It is then possible, with gauze or sponges, to isolate the infected area until the mass is unravelled, the appendix removed and the parts cleansed. Every case of suppurative appendicitis is ready for operation as soon as a diagnosis can be made, and the speaker did not agree with Treeves that very few cases required operation before the fifth day. "It is much better to carefully and deliberately approach the abscess than to wait for the abscess to come to the point."

In the course of his paper Dr. White gives the following rules for operation as being such that few, if any, surgeons will dissent from them: "Immediate operation is indicated whenever the onset of a case of appendicitis is marked by both suddenness and severity; whenever, during even a mild attack, the symptoms at the end of twenty-four hours are unrelieved or are growing worse; whenever, in cases seen later, a firm, slowly-forming, well-defined mass is to be felt in the right iliac fossa; whenever at any time a sudden increase in the acuteness of the pain and a rapid diffusion of tenderness occur: whenever there is good reason for believing the appendix infection to be tubercular in character; whenever attacks of any type have been numerous, or are increasing in either number or gravity, or have unfitted the patient for work or activity, or have caused local symptoms which are permanent and persistent or have at any time put the patient's life in great danger." *Robt. C. Kirkpatrick.*

Puncture and Incision of the Pericardium.

Delorme et Mignon. "Sur la ponction et l'incision du pericarde" —*Revue de Chirurgie*, 10 Janvier, 1896.

(Commenced in the April Number.)

In their final article, Delorme and Mignon discuss the results of puncture and incision of the pericardium.

They have collected 102 cases; of these 61 are reported to have died, 36 to have been cured, and in two instances the results are not given by the operators.

They contend, and rightly, that these figures do not truly represent the benefits that may be derived from puncture and incision, as in many of these cases the operation was performed as a last resort, the patient really dying from lesions developed before the operation was performed. They urge that if it can be shown that puncture and incision of the pericardium are sometimes followed by cure and always by amelioration of the symptoms, that they have gained their cause. They report one case where death was undoubtedly caused by the operation. The trocar had been forced through the left 4th interspace, close to the sternum. The operator withdrew two ounces of blood ; five minutes afterwards the patient died from haemorrhage into the pericardium. The autopsy showed that the trocar had penetrated the right ventricle of the heart on the middle of its anterior surface.

In a few instances a fluid, sero-sanguinolent at the time of operation, became purulent afterwards. This may have been due to dirty instruments and imperfect technique.

Many of the unfortunate results are avoidable.

Patients bear the operation well.

Of 100 cases, 82 were punctures and 18 incisions. Of the 82 punctures 54 died and 28 recovered, a mortality of 65 p.c. Of the 18 incisions 7 died and 11 recovered, or a mortality of 38 p.c.

These figures speak strongly in favour of incision as compared with puncture.

These articles are of great value and are well illustrated, and they lead one to think that there is a legitimate field here for the surgeon to step in and do useful work. *Geo. E. Armstrong.*

Gynaecology.

Anterior Colpotomy.

The latest operation to cause much discussion in gynæcological circles is anterior colpotomy, or opening of the abdomen through the anterior fornix, and it is meeting with much adverse criticism from the upholders of ventro-fixation and Alexander's operation.

Anterior colpotomy was brought to the notice of the English-speaking medical world, chiefly, by Martin, of Berlin, at the meeting of the British Medical Association, which was held in London last year. Upon that occasion he reported 109 cases in which he had opened, with good results, the abdominal cavity through the anterior vaginal fornix for various conditions, such as : 1. Myomectomy ; 2. Fixation of retroflexed uteri unless where very adherent ; 3· Procidentia, here combining colporrhaphy with anterior colpotomy ; 4. Cystic ovarian tumours ; 5. Diseases of the tubes.

Martin was first led to adopt the operation by Dührssen, who makes a vertical incision through the anterior vaginal wall from near the tip of the cervix to within about one inch of the meatus urinarius· The bladder is separated and the utero-vesical pouch opened up by forceps, this opening being enlarged by the fingers. The uterus is antiverted by Orthman's instrument, a combination of probe and volsellum, and interrupted sutures of stout juniper catgut are passed through the edges of the vaginal wound and the fundus. These are tied and the edges of the wound are further approximated by a continuous catgut suture. The advantages claimed for this operation are : 1. It is almost bloodless ; 2. Short convalescence, the patient getting up on the twelfth day ; 3. No local treatment is required ; 4. There is no feverish reaction.

In two cases seen by the writer, one being operated on by himself, there was practically no post-operative disturbance whatever and the immediate result of the operation was good.

Mackenroh has modified this operation by making a transverse incision in the vaginal wall, but has entirely abandoned it on account of the frequency of complications in pregnancies following the operation. He now stitches the uterus to the bladder, claiming that you thus allow of normal mobility of the organ, but he says nothing of the irritable bladder which one would expect to have as a result of pressure of the uterus upon that viscus.

Merkel (*Der Frauenarzt*, March, 1896) prefers ventro-fixation to vagino-fixation in cases where the abdomen has to be opened for other conditions, and also in virgins, thus showing that he has no fear of the operation causing complications of pregnancy. He says, however, that "Dührssen's vagino-fixation is to be practised in retro-flexion in women with a wide vagina where other plastic procedures are needed at the same time. Colporrhaphy, excision of the portio-vaginalis, or perineoplasty are often called for in such cases where vagino-fixation is necessary."

Taylor (*British Medical Journal*, Vol. I., 1896) considers vagino-fixation of a retro-flexed or verted uterus to be a more difficult operation than ventro-fixation, but thinks it is of distinct advantage to the patient, as she recovers "more quickly, more simply, more surely and less painfully after vaginal section than after abdominal incision."

Gottschalk (*Cent. f. Gyn.*, No. LII., 1895) reports a death from pulmonary embolism on the seventeenth day after hysteropexy, the patient getting up contrary to orders, but this is no argument against the operation.

Gaubaroff (*Arch. de Tox. et de Gyn.*, November, 1895) reports a case of pregnancy after hysteropexy. The cervix was so high up and pointed so directly backwards that the child had to be delivered by cæsarean section. (The sutures were probably introduced too far down on the posterior surface of the uterus.)

Miländer (*Zeitsch. f. Geb. Gyn.*, January, 1896) reports 74 cases of pregnancy following hysteropexy. Of these 54 went to term and 10 were still pregnant when the report was published. Six aborted and in three labour was premature. Eleven of the full term cases required some form of obstetric aid.

Alexander's operation has lately been championed before the New York Obstetrical Society by Dr. F. W. Johnson, of Boston. In 240 cases operated on by himself, he only once failed to find the ligament, and as this exception was among his earlier cases he attributed this failure to lack of experience. He had two deaths, one from septic peritonitis and one from pneumonia. Twelve of his own cases were delivered at term and the uterus resumed its normal position afterwards. The vast majority of the cases quoted by the author as occurring in the practice of other operators show equally good results. The operation appears to be in high favour in Boston, as 583 cases are reported, divided among nine operators, with a mortality of three. Among his own cases Johnson had two hernias, both of which were controlled by trusses. Cystitis followed many of his operations, whether a catheter had been employed or not. He says that suppuration in the wound is not dangerous if the pus is let out early, nor does it affect the retention of the uterus in its normal position. He reports 90 per cent. of anatomical cures.

In the discussion which followed Johnson's paper, Dr. H. N. Vineberg stated that he himself had seen three or four cases of hernia following Alexander's operation, while Dr. De Garmo and Dr. Coley had observed twelve and nine cases respectively, and all within the last two years. *F. A. L. Lockhart.*

Pathology.

Amyloid Degeneration.

CZERNY. AD. "Zur Kenntniss der glykogenen und amyloïden Entartung."—*Arch. f. exp. Pathol. u. Pharmakol.*, XXXI., 1893, p. 190.

CZERNY. "Uber die an Thieren Experimentell hervorgerufene Amyloidentartung."—*Ctbl. f. Pathol.*, VII., 1896, p. 282.

LUBARSCH, C. "Beiträge zur Histologie der von Nebennierenkeimen ausgehenden Nierengeschwuelste."—*Virch. Arch.*, Vol. 135, 1894, p. 149.

KRAWKOW. "Ueber bei Thieren Experimentell hervorgerufenes Amyloid."—*Ctbl. f. Pathol.*, VI., 1895, p. 337.

While our knowledge of the causes of diseases and of the nature of morbid processes has of late advanced by leaps and bounds in certain directions, in others it has been for years at a practical and painful standstill. I speak feelingly. There is a keen pleasure as a lecturer in pouring out the *εὐαγγελιον* of new knowledge gained in connection with this or that condition, of clearer conception of its nature and of successful treatment of the same. It is far otherwise when having racked original authorities in the hopes of gaining new light upon some special branch, the truth is forced upon one that so far as regards essential facts one has attained nothing fresh and nothing new, beyond what one knew as a student, and that hearers will find the whole gist of an hour's lecture excellently arranged, with no important point unrecorded, in one page or less of Delafield and Prudden. One might as well be a routine lecturer upon the first book of Cæsar or Euclid at some select academy for young gentlemen for all the stimulating effect that lecturing thus exerts upon the lecturer. It may be that there is—doubtless there is—a virtue in the lucid exposition of facts; it may be that the mind can become attuned to, nay, can experience a certain sublime edification in the recital, year after year, of the same precise items of information. There have, for example, been many virtuous teachers of anatomy. But I have noticed that even good anatomists rise to a higher pitch of enthusiasm over some newly described innervation of the extensor minimi digiti or accessory few fibres of that most useful muscle the triangularis sterni, than over, say, the boundaries of Scarpa's triangle or the course and divisions of the ulnar artery.

Perhaps the modern pathologist is being spoilt by the very embarrassment of riches, and ought to appreciate more highly the yearly round and common task of enunciating the little that is known, and that little unsatisfactory, concerning sundry branches of his subject, and others may not appreciate his felicity when at last some small advances are announced in the same. There are, for instance, the regressive metamorphoses of tissues. We know sadly little about them beyond the mere facts that certain abnormal conditions of the system at large are apt to induce now this now that form. What are the conditions leading to the various degenerations have been carefully noted. What tissues are especially liable to be affected by each degeneration are copied in detail from one text-book into the other; but when we come to enquire why this or that degeneration manifests itself we in almost every instance enter into the realm of theory.

To select one example, amyloid or lardaceous degeneration. We all know that this is especially liable to supervene upon long-continued drain upon the system, that it shows itself most frequently after prolonged suppurative disease—cold abscesses, tuberculous fistulæ, chronic ulcerative phthisis, and less frequently in association with ulcerative cancers, advanced syphilitic lesions, leukæmia—and again after long-continued discharges, and even in some cases after prolonged lactation. We all know that it shows itself most frequently in the spleen, and next most frequently in the liver and kidneys (though we do not know, and the student was in error who ventured the information, that it produced the "tapioca kidney"). We know that the amyloid substance is laid down especially in the walls of small arteries and in basement membrane and affords characteristic reactions with iodine and the basic aniline dyes. But how it comes to pass that this substance is developed and laid down and what is its nature, these are matters concerning which we know but little more than was determined by Virchow and the earlier observers.

It is true that as regards its nature some little advance has been made—it has been shown that Virchow was wrong in comparing it with the starches and terming it amyloid, and that as Hamilton shows the reaction with iodine and weak sulphuric acid which led Virchow to this conception of its relationship is uncertain, and can be given by other substances, such as cholesterine, which is often present as an admixture. Kuhne and Rudneff, by taking advantage of the fact that it is singularly resistant and is not digested by the gastric juice, have been able to gain it in a relatively pure state, and have assigned to it a provisional formula, which so far as it can be accepted leads to the conclusion that if it is not a proteid, it consists of a combination of proteid with possibly some carbohydrate substance. But at best the foundations for such conclusions are insecure. Similarly that amyloid and hyaline matters are animal gums—compounds of proteid and carbohydrate, analogous to the products of tissue metamorphasis in plants, the vegetable gums—while suggestive, remains "non-proven." Nevertheless the recent work to which I have referred all points in the direction of these hypotheses.

In the first place it has been found possible to reproduce amyloid disease experimentally. In the course of other researches Frisch noted that very occasionally (4 times out of 300 cases) there might be amyloid degeneration accompanying or following the keratitis induced by inoculation of anthrax into the rabbit's eye, and Bouchard and Charrin, in the course of their studies upon the B. pyocyaneus, found similarly that when chronic disease in rabbits was set up by inoculations with this microbe, there might be a development of amyloid degeneration in the kidney and various organs. Now Krawkow demonstrates that repeated inoculations of the main microbe of suppuration—the pyococcus aureus—into the rabbit leads in 66 per cent. of the animals employed, to an extensive amyloid condition of the spleen—a less extensive disturbance of other organs. In the hen also the same results may be obtained. In the rabbit, beginning with small doses of the pure culture he obtained local abscess formations, and as the animals recovered from the immediate effects, further doses were given. As will be readily comprehended by those who have studied the production of immunity, he found that the successive doses had to be successively increased so as to produce effects until at last as much as 30 ccm. of pure broth cultures were necessary. As a consequence the animals become more and more emaciated and eventually died. The amyloid change could at times be found as early as the eleventh day. In fowls apparently there was not the same degree of emaciation, and amyloid change was only found in from six weeks to two months.

But previous to the publication of Krawkow's results, Czerny had already experimentally produced the degeneration by another method, namely, by subcutaneous injections of turpentine. It is a well-known fact that turpentine, nitrate of silver and sundry other substances are capable of producing in the dog an aseptic abscess formation, and Czerny by repeated hypodermic injections extending over from three to seven months, caused the development of the degeneration in five cases.

Experimentally, therefore, conditions which induce pus formation can be shown to induce also the lesions characteristic of amyloid degeneration.

This is in itself an advance, but Czerny was led to his results by a very interesting path which seems to open up further knowledge of this obscure degeneration, namely he was led to make these observations in the course of a research upon glycogen formation.

It is now a matter of common knowledge that pus cells contain glycogen—or if not glycogen, a precursor of the same, which gives the micro-chemical tests for glycogen, while, chemically, glycogen itself can be obtained from pus. There are slight but important differences between the globules or granules seen in the pus cells and the chemically pure substance.

Czerny showed that while glycogen was present in the healthy blood, it is not recognisable by micro-chemical methods, either in a free state or in the white corpuscles. It is, however, to be recognized by such methods in suppurative disease, and indeed in several conditions, notably in cases of atrophic disturbance, progressive anæmia, chronic gastro-enteritis and cachexia of various types. In such cases the circulating leucocytes to a greater or less degree contain granules which take on a brown stain with iodine, and they are also increased in number.

He found that he could induce the conditions experimentally in the dog in several ways, by lowering its temperature, by severe respiratory disturbance (unilateral pneumothorax) or severe anæmia (blood letting) or again by subcutaneous injections of turpentine. It was this last experiment that led him to the study of amyloid degeneration.

It is worthy of note that there is a certain amount of correspondence between amyloid material and glycogen so far as concerns the chemical tests. Both react towards solutions of iodine, being turned brown. Now the granules seen in the blood and pus corpuscles react in a manner intermediate between these two substances. They give the common iodine test, as with glycogen the brown colour with iodine disappears on heating, to reappear again on cooling, and under the action of the salivary ferment the granules disappear, being converted to a sugar just as glycogen is under similar conditions. But then they resemble amyloid in the fact that Virchow's test with iodine followed by weak sulphuric acid leads to the production of a blue colour. Here then in these intra-cellular granules, it seemed as though the long sought precursor of the amyloid material might be present—and continuing his researches with the method which gave him the best results, Czerny, as I have already stated, showed that injections of turpentine, which at first led to the development of these intracellular granules, eventually induced the amyloid deposits in the spleen and elsewhere.

In the kidney of the hibernating frog Lubarsch has noted a similar intermediate body; certain interstitial cells containing granules staining with iodine and dissolved by the saliva, which nevertheless give the amyloid gentian test. There appears to be a series of transition forms between the glycogen and the amyloid bodies.

Judged by micro-chemical tests it is evident that amyloid material is of inconstant composition. Years ago von Recklinghausen pointed out that the corpora amylacea are more closely allied in their reactions to glycogen than to amyloid material proper. Furbringer and Hansemann have indicated that there are amyloid substances which do not react to iodine, and Krawkow shows that though the extensive enlargement and degeneration of the rabbit's spleen is due to the presence of undoubted amyloid (which can be isolated by peptic digestion), the reaction with iodine is singularly weak.

These researches, therefore, would seem to lead us to the following conclusions:

1. That chemically pure glycogen added to blood and the glycogen present in healthy blood, give no definite reaction with iodine.

2. That in atrophic conditions, and severe anæmia, the circulating leucocytes, and in cases of suppurative diseases, both pus and circulating leucocytes, contain a substance which gives the reactions for glycogen, and from which glycogen can be obtained, but which also appears to be intermediate between glycogen and amyloid material.

3. That conditions characterized by the presence of leucocytes containing this substance can experimentally be shown to lead to amyloid degeneration of the tissues.

4. That according to the results of micro-chemical reaction amyloid material is not of uniform composition. There would indeed seem to be a series of bodies, with pure glycogen at one end of the series, and amyloid, if not hyaline, material at the other. (I shall proceed a little later to speak of hyaline.)

But accepting these views we are not by any means out of the wood. Glycogen is a carbohydrate; amyloid, judging from Kuhne's analysis, if not a proteid, contains a preponderance of proteid material. Neither Czerny nor Lubarsch nor Krawkow attempt to describe this aspect of the case. Granting that the observations of the first two are correct and—what cannot yet be accepted as more than probable—that there is a relationship between the two substances, we are, I take it, bound to assume that amyloid and amyloid degeneration is due to an absorption or infiltration of certain tissues—the middle coats of arteries, adventitia of capillaries and basement membranes—with the glycogen-like substance which in this process becomes intimately associated with the pre-existing proteid matter of these tissues, and the compound, or compounds, so formed are the amyloid substances of disease. Now, as I have already stated, those working along other lines (Klebs) have come to a somewhat similar conclusion, namely, that amyloid is a compound of proteid and carbohydrate substances.

Thus these similar conclusions reached by different methods support Czerny's views and tend to show that amyloid is a later stage of glycogenous degeneration.

It would seem that there is a series of degenerations due to the formation of these compounds of proteid and carbohydrate bodies—mucin, amyloid and hyalin. Landwehr has indicated that mucin is of this nature, and between hyalin and amyloid material there are frequent transitions. At times these two are found in the same subject and indeed in the same organ and same parts of an organ; indeed in some cases it appears that the one substance undergoes transformation into the other. But here we enter more doubtful territory. Nevertheless, advance in our knowledge of these degenerations seems to be possible along the lines of work undertaken by these observers.

J. G. Adami.

Reviews and Notices of Books.

The American Text-Book of Medicine and Surgery; being a Yearly Digest of Scientific Progress, and Authoritative Opinion in all branches of Medicine and Surgery, drawn from Journals, Monographs, and Text-books of the leading American and Foreign Authors and Investigators. Collected and arranged with critical editorial comments by several of the leading American authorities, under the general editorial charge of GEO. M. GOULD, M.D. Profusely illustrated. Philadelphia: W. B Saunders. 1896.

This large and handsomely illustrated volume will, we believe, prove to be a work of much practical value, not only to the general physician, but also to the specialist. Containing much more material than most of the annuals, it affords a useful epitome of all important contributions which have been made to medical knowledge during the past year.

Under the editorship of Dr. Gould, a very able staff of collaborators has been secured, and a successful effort has been made to review only those papers, which are or may be contributory to actual progress. New facts and new methods of treatment receive a careful critical notice from the editors of the several departments. Among the list of editors we notice the names of Pepper, Keen, Hirst, Baldy, Louis Starr, Hardaway, Gibney, Barnett, Ingals and Guitéras—names that sufficiently attest the high character of their several articles.

We have made use of this volume frequently during the past few weeks, and have been much pleased not only with the matter which it contains, but also with its arrangement. We believe that such works as this fill a very definite want in the physician's library, which the bound volumes of no ordinary series of weekly or monthly journals can do. A. D. B.

A Treatise on the Medical and Surgical Diseases of Infancy and Childhood. By J. LEWIS SMITH, M.D., Professor of Diseases of Children, Bellevue Hospital Medical College. Eighth edition, thoroughly revised and greatly enlarged. 273 illustrations and 4 plates. Messrs. Lea Bros. & Co., New York and Philadelphia.

We have much pleasure in calling attention to the eighth edition of this well-known treatise on Diseases of Children. The work has been thoroughly revised, and a great portion of it rewritten. Eight additional chapters have been added, relating chiefly to Surgical Pediatrics. These have in great part been written by Prof. Stephen Smith. Prof. O'Dwyer contributes the chapter on Intubation.

This text-book has for many years retained its position as an authoritative exponent of American teaching in this department of medicine. We, therefore, gladly welcome the new edition, which enables it to still keep abreast of its many competitors, and can cordially recommend it to the young practitioners, as embodying the latest opinions of a most careful and practical teacher, whom we all regard with respect and admiration, as in some respects the father of American Pediatrics. A. D. B.

A Manual of the Practice of Medicine. By GEORGE ROE LOCKWOOD, M.D. With 75 illustrations in the text, and 22 full page coloured plates. Saunders New Aid Series. W. B. Saunders, Philadelphia, 1896. Price, $2.50 net.

We have read over this manual carefully and regard it as a very excellent work of its class. Symptoms are stated fully and succinctly. The temperature charts are numerous and the illustrations excellent. We have much pleasure in recommending the book, not only to students, but to physicians who desire to have a work in which the essential facts and principles of the practice of medicine are stated in a concise and available form. A. D. B.

Ruhmkorf Induction Coils,' their Construction, Operation and Application. By H. S. NORRIE. Pp. 183. Price, 50 cents. New York: Spon & Chamberlain, 12 Cortlandt Street.

A book of this kind will be appreciated at the present when so much interest is displayed in the discoveries of Roentgen and others.

It is a practical work, giving the details of coil construction and the effects of the current, especially *in vacuo.* Chapters on primary and storage batteries are added, and the last chapter is devoted to the Roentgen rays.

The work is what it professes to be, a practical hand-book on induction coils, and as such we recommend it. R. C. K.

A Hand-Book of Medical Diagnosis. By JAMES B. HERRICK, M.D. Philadelphia: Lea Brothers & Co. 1895.

This book, as its preface indicates, is intended chiefly for students, and the aim has been to bring together the main facts in diagnosis, chemical, bacteriological and microscopical, as well as the general principles of physical examination.

We would suggest that the facts are compressed in too small a space, and hence the volume cannot but fail to satisfy any other than the incipient medical student. To those who for the first year visit the dispensaries and out-patient hospital rooms the book certainly commends itself, supplying, as it does, the typical general considerations of diagnosis. For the more advanced students, however, it lacks the breadth of compass and the detail found in many of the more voluminous books of a similar character, and which are absolutely essential in view of the fact that so few cases are, after all, text-book types. Some of the chemical tests now employed clinically are quite unjustly disregarded—such for example as Huppert's test for bile pigments, while Rosenbach's modification of Gmelin's test is best performed by the use of *nitrous*, not nitric acid, as given.

In the chapter on urinalysis it is suggested that it is important to differentiate between cells from the kidney and those from the urinary bladder, but the distinguishing features are not dealt with.

Setting aside, however, many slight inaccuracies and deficiencies it may be said that the general plan of the work is good, the plates are well selected, and the style admirable.

It is recommended to junior students, to whom larger books would no doubt at such a time be burdensome. C. F. M.

An Introduction to Pathology and Morbid Anatomy. By T. Henry Green, M.D., F.R.C.P. Seventh American edition, revised and enlarged by H. M. Murray, F.R.C.P. Philadelphia : Lea Brothers & Co. 1895.

It is now more than six years since the above work has passed through a new edition, and the present volume is an effort to bridge over the long period by addition of the main results of recent pathological research. The general plan of the book as previously published, has been maintained, and the more recent advances are to some extent satisfactorily dealt with. The effort is made to include some of the most important bacteriological discoveries, but the subject of immunity is lamentably deficient. Such names as Kanthack and Hardy, Buchner, Hankin, Roux are either entirely disregarded or their work is but casually mentioned. Instead of associating the subject of inflammation with that of immunity, the same lines are maintained as in the older work, in spite of all that Metchinkoff and others have done to change entirely the aspect of this important chapter in Pathology.

Many new excellent plates have been added, and considering that the book purports merely to be an introduction, the portions devoted to morbid anatomy are concisely put and comprehensive. C. F. M.

The Toxic Amblyopias; their Classification, History, Symptoms, Pathology and Treatment. Being an essay to which was awarded the Alvarenga prize of the College of Pysicians of Philadelphia, October, 1894, By G. E. de Schweinitz, A.M., M.D. Forty-six illustrations and nine plates. Philadelphia : Lea Brothers & Co 1896.

This work of Dr. G. E. de Schweinitz, of Philadelphia, is for the most part an elaborate *resumé* of our knowledge up to the present time of the toxic amblyopias.

The subject is well handled and classified, and consequently the study of it is much facilitated.

The original work of the author forms but a limited part of the whole, yet is valuable as far as it goes.

More especially does this hold true of his researches in regard to the toxic eye symptoms of quinine, which are most elaborate.

The amount of quinine which can give rise to toxic symptoms varied from fifteen grains to one ounce in twenty four hours.

The eye symptoms varied from temporary amblyopia, diminished accommodative power, and semi-dilated pupil to complete blindness; the duration of the blindness varied from a few hours to three months; the fundus changes were pallor of disc, anæmia of retina, and sometimes a cherry-coloured spot at the macula, etc. The prognosis is good, there very exceptionally resulting permanent blindness.

The pathological changes noted are the results of the author's experiments on dogs; the details of the experiments are very interesting. The results are: Endovasculitis of the optic nerve vessels; organization of a clot, the result of thrombosis: widening of the infundibulum of the vessels as a result of the constriction of the surrounding nerve fibres, causing appearances not unlike glaucomatous excavation; and finally practically complete atrophy of the visual path, nerve, chasm and tracts.

The initial effect of the quinine is on the vasomotor centres, producing constriction of the vessels; endovasculitis, thrombosis, etc., resulting.

A curious point is the selective influence of the quinine for the optic nerves and tracts, the adjoining ciliary nerves and oculomotor nerves escaping.

Dr. de Schweinitz also experimented with cinchonine and got similar results, except that larger doses were required.

Salicylate of sodium was also investigated, but further experiments must be undertaken ere final judgment can be given. From what he observed, the author considers it is possible to produce blindness with large doses, the ophthalmoscopic changes resembling those of quinine.

A large portion of the book is taken up by the consideration of the alcoholic and tobacco amblyopias, but little or nothing absolutely new is presented, there remaining still the haziness about the alcoholic cause, as it is almost impossible to eliminate the tobacco factor; still the purely alcoholic cause in some cases seems very probable.

Lastly, Dr. de Schweinitz conducted a series of investigations on the toxic action of filix mas, on dogs and rabbits.

In no case was there any fundus change, nor positive signs of blindness as in human beings, nor could any microscopic lesion be made out.

The foregoing paragraphs cover the most of the author's original work.

The compilation of the rest of the book, must have taken much time, and, as stated at the outstart, is well done.

The book will be of value as much to the general practitioner as to the specialist, presenting as it does, in a succinct form, the present status of the subject.

As a work of the publishers it is handsomely bound and beautifully printed, appearing not unlike an edition *de luxe*. J. W. S.

Society Proceedings.

MONTREAL MEDICO-CHIRURGICAL SOCIETY.

Stated Meeting, April 17th, 1896.

F. G. FINLEY, M.D., FIRST VICE-PRESIDENT, IN THE CHAIR.

Ichthyosis Hystrix.

Dr. G. GORDON CAMPBELL showed a photograph of a remarkable case of this disease. The patient, a boy aged seven years, was born in Vermont, and, except for the discomfort caused by the cutaneous lesion, had always had good health. The family history was negative; one sister, three years of age, showed no tendency to xeroderma. The eruption was first noticed, three weeks after birth, as a thickening of the skin of the palms and soles; and since then, although there had been marked improvement at times, the boy had never been entirely free from it. The distribution was accurately symmetrical and the intermediate skin perfectly healthy. The palmar surfaces of the hands from the wrist to the tips of the fingers were covered with dark-green horny masses, half an inch in height, and so thickly set together that it was impossible to close the hand. Less prominent warty growths extended on to the backs of the hands, forming a bracelet around the wrist and covering the knuckles and backs of the fingers. The whole of the feet from the ankles down were covered with similar horny growths, thickest upon the soles, and rendering any movement of the instep or toes impossible, except after softening with some oily application. There were also small patches, about two inches in length and half an inch in width, running vertically at the anterior axillary lines and the groins; broad patches on the extensor surfaces of the knees and elbows; and one surrounding the anus and following the fold between the buttocks. The horny growths in these latter localities were not nearly so prominent. Owing to the apparent increase in the size of the extremities, due to the heaping up of epidermis, the condition had been mistaken for elephantiasis.

Foaming Liver.

Dr. J. G. ADAMI showed specimens of a case, a report of which will be published later.

Dr. C. F. MARTIN recalled two instances of a condition somewhat similar to that described by Dr. Adami. In one, at a *post-*

mortem which he had seen performed in Vienna, the mucus membrane of the urinary bladder had been almost entirely lifted by the emphysema. The *B. coli communis* was suspected, though no bacteriological examination had been made. In the other, a case of septicæmia from streptococcus infection, occurring in this city, a large portion of the ileum presented the same emphysematous appearance. He thought that these two conditions, although not recognized at the time, were probably due to the same cause.

Adhesions and Malpositions of the Omentum.

Dr. J. G. Adami read a paper on this subject, which will be published later.

Dr. H. A. LAFLEUR asked how Dr. Adami could harmonize with his theory the fact that in typhoid fever, in which perhaps more frequently than in any other abdominal disease death threatened from perforation of the bowel, omental adhesions were so seldom found. He had yet to see a case of typhoid fever with perforation in which such adhesions had formed. In appendicitis omental adhesions were common, and in dysentery adhesions between the coils of the bowel were not infrequent.

Dr. N. D. GUNN asked if when fat was laid down in the omentum there was a corresponding increase in the capillaries ; if not, then Dr. Adami's statement concerning the vascularity of adipose tissue was disproved. Also, that the presence of much fat in the omentum would greatly interfere with the elasticity which, according to Dr. Adami, was necessary to the protective function which he suggested.

Dr. F. A. L. LOCKHART thought that the paper was of as great interest to the abdominal surgeon as to the pathologist, from the important part played in surgery by the omentum in preventing adhesion of the intestines to the abdominal wall. He referred to a case in which the intestine had become adherent in two places to the line of incision, and through the loop thus formed a coil of intestine had passed, and caused obstruction. This would not have occurred if the omentum had been drawn down at the previous operation. The extreme variations in the size of the omentum referred to by Dr. Adami he had frequently observed. That a long and adherent omentum might complicate diagnosis and operation in abdominal work, the following two cases clearly show. He operated, two years ago, on a patient who had double pus tubes, and, on opening the abdomen, had found that the intestines were covered in by a long omentum, which was adherent to the anterior part of the pelvic brim, and which had to be ligatured and divided in order to get at the diseased tubes.

The second case was a dermoid of the right ovary, which was held in the vesico-uterine pouch by the right tube and broad ligament on the one side, and by the omentum, which was adherent to the left side of the tumour and extended to the left pelvic brim, where it was also attached. He had frequently remarked the fact that there was less hæmorrhage from an abdominal wound in a fat person than in one who had thin parietes.

Dr. WESLEY MILLS had long held, and often expressed, the view that the study of physiology should not be confined to those who were physiologists by profession, but that everyone connected with the medical profession should endeavour to do something to throw light upon the function of parts in health as well as in disease. He referred to the scant notice taken of the omentum in text-books and discussed some of the probable uses of the organ. He also pointed out the importance of both the circular and longitudinal muscle supply in arteries as elastic structures that often served a good purpose when the elastic tissue proper had been impaired by disease.

Cerebellar Ataxia.

Dr. N. D. GUNN reported the following case of a boy, aged 12 years of normal somatic development, sluggish cerebration and psychic perversions.

Family history was good, and no hereditary or familiary diseases could be traced. The doctor was consulted because of inability to control movements of the legs, spasmodic incontinence of urine, and great pain in the head. Besides these there was violence of temper and sexual excitement.

The incoördination began two months after an injury to the head, which perhaps was only incidental. Besides at this time there were diplopia, vertigo, headache and cerebral vomiting, the latter lasting two months.

Examination revealed static ataxia, with inclination of the body to the right side. Speech deliberate and monotonous. Inability to stand without support. Incoördination of arms. Muscular power good. Muscular irritability increased. Deep reflexes increased. (Patellar greatly exaggerated, and very slight clonus.)

There was no nystagmus, but there was a choroiditis.

The doctor, on the authority of Brissand, considered the presence of exaggerated reflexes enough to exclude spinal ataxia.

The presence of ankle clonus and the disturbances of the higher centres, shown by diplopia, cerebral vomiting, static ataxia and zigzag incoördination, and the absence of nystagmus, made this case conform pretty closely with Marie's group known as "hereditary cerebellar ataxia," though the element of heredity was here absent.

Dr. JAMES STEWART referred to a very similar case, with, however, a history of ataxia preceding the injury. He thought that it was very difficult to separate cerebellar ataxia from Friedreich's ataxia.

Stated Meeting, May 1st, 1896.

A. D. BLACKADER, M.D., PRESIDENT, IN THE CHAIR.

Excision of the Maxilla with the Use of an Artificial Plate.

Dr. G. E. ARMSTRONG reported this case as follows: Mr. W., æt. 48, was admitted to the Montreal General Hospital on the 5th March, suffering from a rapidly growing sarcoma, situated chiefly in the anterior of the left superior maxilla. There was nothing unusual about the operation of removal of the upper jaw, which was done by the median incision, but I have brought him here this evening to show the plate which Dr. J. S. Ibbotson, the dentist to the Montreal General Hospital, has made for him. You will see, by examining him, that it consists of an upright plate, which restores the form of the cheek, and a horizontal part, which takes the place of the absent hard palate on the affected side. He seems to wear it with comfort, and when it is in place he can eat, drink, and speak very well. It seems to be a decided success.

The Tropometer.

Dr. F. BULLER showed the instrument and demonstrated its use.

Primary Cancer of the Urinary Bladder associated with Stone.

Dr. W. H. JAMIESON reported the case, which will appear latter.

Dr. J. G. ADAMI pointed out the very extensive study and attention that Dr. Jamieson had given to this case. It was worth so much study, inasmuch as primary cancer of the bladder was so very rare, more especially when associated with stone. He recalled a case that he had brought before the society in 1893, in which also he was dealing with cancer of the bladder; but in this case the cancer was primary in the prostate. In that also there was great difficulty in following out the cancerous manifestation, from the fact that the growth in the bladder-wall became so cellular as to be scarcely distinguishable from a round-celled sarcoma.

Cyanide of Potassium Poisoning.

Dr. WYATT JOHNSTON showed the organs from a case, and described the methods used in detecting the toxic agent.

Dr. ADAMI remarked that Dr. Johnston's case, with his demonstration of the so easily recognizable odour of potassium cyanide so many days after the death of the individual, recalled vividly to his mind his experiments upon dogs, undertaken in connection with the Hooper case, in which he found that the cyanide could readily be detected eleven days after death. At the same time he pointed out how peculiarly volatile is this poison, for within a few seconds, in fact, almost immediately after Dr. Wyatt Johnston had opened the bottles containing his specimens, he and those around him had no difficulty in recognizing the well-known odour. But he fully felt the force of what Dr. Johnston had said, namely, that those unaccustomed to the autopsy smell might easily, at a *post-mortem* examination, be overwhelmed by that smell, and fail to recognize or analyse the conjoined odour of potassium cyanide.

Dr. C. G. L. **Wolf** said that the tests for the detection of hydrocyanic acid at the *post-mortem* table were highly sensitive and at the same time easy of performance. There were two, the potassium sulphocyanide test, and the obtaining of Prussian blue. In the first test one allowed the gas escaping from the stomach on opening to impinge against a paper moistened with yellow ammonium sulphide. On driving off the excess of sulphide by gentle heat over a flame, and touching the spot with a dilute solution of ferric chloride, the splendid blood-red colour of ferric sulphocyanide appeared.

In the second a filter paper moistened with potassium hydrate solution was exposed to the gas, and then moistened with a solution of ferrous sulphate, by which one obtained potassium ferrocyanide. It was then treated with dilute hydrochloric acid and a solution of ferric chloride, when, if hydrocyanic acid was present, Prussian blue was formed.

It was interesting to note that in the sample of powder which had been examined, and which was probably part of the potassium cyanide used, no trace of hydrocyanic acid was found, as by the action of the air it had been changed to potassium carbonate.

The sample used in this case had been an ordinary impure cyanide, containing originally a large quantity of sodium cyanide.

Fracture of the Skull.

Dr. **Wyatt Johnston** showed a skull sent to him by Dr. Austin, of Sherbrooke, in which a fracture had been caused by a blow of the fist on the side of the head. Death occurred about twenty-four hours later from meningeal hæmorrhage. The case will be reported in full.

Dr. A. L. **deMartigny** referred to a similar case which had come under his notice. A beer drinker had been struck on the head with a bottle and fell down, but a few minutes later walked home, saying he was all right. Four hours afterwards he went to sleep and never woke again, dying within twenty-four hours after the injury. The autopsy showed the same sort of fracture of the skull as seen in Dr. Austin's case.

The Brain and Skull of a Criminal.

Dr. WYATT JOHNSTON showed the skull and brain of a criminal from Longue Pointe Asylum, and Dr. GEORGES VILLENEUVE gave the clinical history of the case, a report of which will be published later.

Tubal Pregnancy.

Dr. A. LAPTHORN SMITH read the following report :

The following notes of the case are taken from the records of the Samaritan Hospital for women, as reported by Dr. Fiske, the Registrar. Mrs. R., age 38, was admitted on the 3rd of March, 1896, complaining of pain over the abdomen and in the back and of metrorrhagia, both of which had lasted five weeks.

Previous history, never been very strong ; has been married nine years ; had no children, but has had five abortions at about seven weeks of pregnancy, the last one in January, 1895, from which she made a good recovery. Nearly nine years ago, Dr. William Gardner removed a polypus from her womb. Three years ago she was curetted by Dr. Lapthorn Smith who wished to perform abdominal section for disease of the ovaries and tubes and retroversion with fixation. This latter she declined and was treated locally for a year, at the end of which time the condition of the pelvic organs had considerably improved, the uterus becoming fairly movable and the ovaries ceasing to cause much pain. She was then treated for a year with pessaries which kept her comfortable.

History of present illness—Had her period in last week of December, after which she saw nothing until the last week of January, when she began to flow and has continued doing so on and off for five weeks. About a week before admission she was taken with inflammation of the bowels and Dr. Aylen was called in. As she was losing a good deal and suffering a great deal of pain and was moreover seriously ill with pelvic peritonitis, he advised her to enter the hospital for prompt operative treatment.

Present condition—Patient very emaciated, anxious expression, abdomen tender and distended ; nausea and vomiting ; pulse, 130 ; tongue clean, appetite poor. Heart, lungs, liver and spleen normal. A vaginal examination shows the uterus to be retroverted and fixed, with a tumour the size of an orange in the left ovarian region. Right tube enlarged to the size of a sausage and tender.

A diagnosis of tubal pregnancy was made, being based upon the following symptoms : First she believed herself pregnant since her December period, because she has morning sickness, pain in the breasts and fulness of the abdomen. Second, I was aware from my previous knowlege of her case that she had diseased tubes and that it would be difficult for the ovum to reach the uterus. Third, that a mass could be felt in the vaginal lateral cul-de-sac, which was causing pelvic peritonitis, and which could hardly be anything else than a pus tube or a ruptured tubal pregnancy. Fourth, the continuous haemorrhage, coupled with the previous symptoms.

Abdominal section was performed on March 10. On entering the peritoneal cavity, the pelvis was found pretty full of black clotted blood, of which about a cupful was removed, after which the left tube and ovary forming a mass the size of an orange was detached with some difficulty from its adhesions. While bringing it out of the incision the sac ruptured and a perfectly formed fœtus, about three inches long, escaped with the gush of fluid and hung by the cord. After removing this tube the other tube and ovary were detached with some difficulty and removed. The latter tube was found to be closed at both ends and full of clear fluid. About twenty minutes were spent in cleaning out the clots which were firmly attached to the omentum and intestines, and after sewing the uterus to the abdominal wall, the latter was closed with silk worm gut. The patient made a smooth recovery and left the Samaritan at the end of four weeks.

THE

Montreal Medical Journal.

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THE CANADIAN MEDICAL ASSOCIATION.

The Canadian Medical Association will hold its meeting in this city on Wednesday, Thursday and Friday, August 26th, 27th and 28th. It promises to be one of the most successful meetings in the history of the Association.

PROGRAMME OF PROCEEDINGS.

Wednesday, August 26th.

10 a.m.—Inter-provincial Registration Committee meeting in St. George's Church school-rooms, 15 Stanley street.

12.30 p.m.—Montreal General Hospital, Clinical Work, followed by the general work of the Association in the operating theatre of the hospital.

4 p.m.—Short excursion.

8.30 p.m.—President's Address in St. George's school-rooms, 15 Stanley street, followed by continuation of papers adjourned from the afternoon meeting.

Thursday, August 27th.

10 a.m.—Meeting in St. George's school-rooms, Reading of Papers.

12.30 p.m.—Hôtel Dieu Hospital. Clinical Work, followed by continuation of papers in the operating theatre of the hospital, adjourned from morning session.

4. p.m.—Short excursion.

7.45 p.m., sharp.—Dinner of the Association.

Friday, August 28th.

10 a.m.—Meeting in St. George's school-rooms, Reading of Papers.

12.30 p.m.—Royal Victoria Hospital Clinical Work, followed by continuation of papers in the lecture room of the hospital adjourned from the morning.

Light lunches will be provided for the members at the hospitals, and special electric cars will be furnished to and from the hospitals.

CERTIFICATES OF DEATH IN MONTREAL.

On July 1st will be put in force the by-law, which was passed on the 18th May last, concerning the certificates of death and the burial of persons dying in the city of Montreal. The main provisions of the by-law are as follows: No body shall be buried within the limits of the city, the only exception being in regard to the interment in the Roman Catholic churches of the bodies of priests and nuns. The superintendent of every cemetery shall make weekly returns of all persons buried therein. Within twenty-four hours after the death of any person within the city limits, a certificate of death, according to a form which is supplied by the Board of Health, must be deposited in the health department, and in the absence of this the coroner shall investigate the cause of death. No body may be brought into the city nor moved from one place to another within the city limits without a permit from the medical health officer. No body may be received at a cemetery without a certificate from the medical health officer stating that the proper certificate of death has been deposited in the health department.

This by-law gives the Board of Health full power to obtain complete and accurate returns of the mortality and removes many of the difficulties under which they have been labouring. As far as the city goes it requires that the cause of every death must be certified by a medical man, or else it is made the subject of an investigation by the coroner. It does away with all giving of certificates by clergymen or by two or three friends.

This is a long step in the right direction, and we hope soon to see compulsory registration of births as well. At present there is a register for births at the City Hall, but it is not compulsory to make use of it, and if a child is not baptised it is not registered, and consequently has no legal existence. Besides we can never have vaccination properly carried out until all births are registered and vaccination certificates given returnable within three months. It has got to come, and the sooner the better.

AMERICAN PUBLIC HEALTH ASSOCIATION.

The twenty-fourth annual meeting of the American Public Health Association will be held at Buffalo, N. Y., September 15 to 18, 1896. The Executive Committee have selected the following topics for consideration: The pollution of water supplies; the disposal of garbage and refuse; animal diseases and animal food; the nomenclature of diseases and forms of statistics; protective inoculations in infectious diseases; national health legislation; the cause and prevention of diphtheria; causes and prevention of infant mortality; car sanitation; the prevention of the spread of yellow fever; steamship and steamboat sanitation; the transportation and disposal of the dead; the use of alcoholic drinks from a sanitary standpoint; the centennial of vaccination; the relation of forestry to public health; transportation of diseased tissues by mail; river conservancy boards of supervision.

Upon all the above subjects special committees have been appointed. Papers will be received upon other sanitary and hygienic subjects also.

All communications relating to local matters should be addressed to Dr. Ernest Wendo, Chairman Local Committee of Arrangements, Buffalo, N.Y.

The authorities of Harvard University are protesting against the use of the name Harvard Medical College by a Chicago institution. A bill for an injunction, sworn to by President Eliot of the university, was filed in the Federal Court of that city lately. The Chicago institution is charged with infringing upon the title and the rights of the great university.

The American Microscopical Society will hold its nineteenth annual meeting in the new Carnegie Library Building, Pittsburg, Pa., Tuesday, Wednesday, Thursday and Friday, August 18, 19, 20 and 21, 1896. A hearty welcome will be extended to all interested in the microscopical sciences. Applications for membership and titles of papers to be read at the meeting should be addressed to A. Clifford Mercer, M.D., President, Syracuse, N. Y., or to Wm. C. Krauss, M.D., Secretary, 382 Virginia street, Buffalo, N. Y.

NEW BOOKS, ETC., RECEIVED AND NOTED.

Transactions of the Pan-American Medical Congress. Washington: Government Printing Office.

In Sickness and in Health. Toronto and New York: D. Appleton & Co.

Hydro-electric Methods in Medicine. By W. S. Hedley, M.D. Second edition. London: H. K. Lewis.

Affections chirurgicales du tronc. Par le Dr. Polaillon. Paris: Octave Dion.

Lewis's Diet Charts. London: H. K. Lewis.

Physics for Students in Medicine. By Alfred Daniell, M.A. London: Macmillan & Co. Toronto: Copp, Clark Co.

Practical Points in Nursing. By Emily A. M. Stoney. Philadelphia: W. B. Saunders.

A Manual of Obstetrics. By W. A. Newman Dorland, A.M., M.D. Philadelphia: W. B. Saunders.

Students' Medical Dictionary. By George M. Gould, A.M., M.D. Philadelphia: Blakiston, Son & Co.

Obituary.

ADOLPHE DAGENAIS, M.D.

On Monday afternoon, June 29th, Dr. Dagenais succumbed to the painful malady from which he had been suffering. He was sixty years of age and was one of the oldest practitioners in the city, having passed the examination of the College of Physicians and Surgeons in 1858. He obtained degrees from Victoria University in 1867 and Laval in 1879. In 1872, in conjunction with Drs. Rottot and Desrosiers, he founded the "Union Médicale du Canada." He has been professor of obstetrics in Laval University since 1878, and previous to that date he was visiting physician to the Hotel Dieu. He has held the positions both of Secretary and of Treasurer of the College of Physicians and Surgeons of the Province of Quebec, and in 1876 was President of the Société Médicale de Montréal. He leaves a widow and four daughters, one of whom is a nun in the Convent of the Holy Cross. Dr. Dagenais has been for many years a prominent figure in medical circles and has passed away regretted by all. The cause of death was cancer of the tongue, from which he had suffered for many months.

THE

MONTREAL MEDICAL JOURNAL.

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Original Communications.

THE CENTENARY OF VACCINATION.[1]

MAY 14TH, 1796.

BY

J. G. ADAMI, M.D., M.R.C.S.

Professor of Pathology, McGill University; Pathologist to the Royal Victoria Hospital.

On May the 14th, 1796, Dr. Edward Jenner, of Berkeley, in the County of Gloucester, first inoculated a human being with matter taken from a vesicle of cow-pox. The inoculation so made developed into a well-marked pustule, the pustule with which now-a-days we are so well acquainted, and the inoculated individual was later found to be absolutely refractory to the inoculation of matter taken from a case of well-developed small-pox.

This successful experiment it was which inaugurated the practice now spread throughout the world, of vaccination against small-pox and led to the arrest of a foul disease so common during the last century that almost every other individual in Europe showed signs of its ravages, so rare now-a-days as to be extinct wherever vaccination and re-vaccination is rigorously enforced.

To-day, therefore, we celebrate the centenary of vaccination, and it is fitting that we, whose life-work is devoted to the combat with disease, should consecrate, even if it be but a few minutes, to calling into remembrance the great deeds which were of old, and should employ this occasion to look before and after, considering what has already been accomplished and what the future holds in store. For only now, one hundred years after Jenner's first vaccination, are we beginning to apply successfully the principles underlying Jenner's method of arresting infectious diseases, principles which Jenner himself appreciated, but could not satisfactorily establish—and now with a fuller knowledge of those principles, a future dawns upon us, rich in hope.

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[1] Lecture delivered before the post-graduate students, McGill University, May 14th, 1896.

Mindful of the day, and as a pious duty, let me first briefly recite the main facts that led up to the discovery of vaccination, recalling matters that are historical and, I doubt not, well-known to you.

Our knowledge of small-pox goes back to remote times. The earliest sure reference to it is of its appearing in the Abyssinian army at the siege of Mecca, in what was known as the Elephant War, of about the year 570. The earliest references to small-pox in England, if we leave out a possibly correct reference by Gaddesden early in the fourteenth century, occurs in letters of the years 1514 and 1518. The disease gradually rose to prominence about the end of Elizabeth's reign. In the autumn of 1641 we hear of 118 people dying with small-pox in London in one week, at a time when the population was between 300,000 and 400,000, or roughly about the same as that of Montreal. The experiences in England were similar to those on the European continent generally. Towards the close of the seventeenth century the disease became more and more general and more and more feared. In Iceland, in 1707 to 1709, after an absence of nearly 40 years, it killed 18,000 in a total population of 50,000. In England, in 1723, Dr. Jurin calculated that upwards of 7 per cent., or somewhat more than 1-14th part of mankind, died of small-pox.

In 1775 it would seem that in Chester, only 1,060, or 1 out of every 14, had not contracted small-pox.

I have seen it stated as an explanation of the lack of beauty revealed by the pictures by Sir Peter Lely, Sir Godfrey Kneller and others, of the Court beauties of the 17th and 18th centuries, that so common was the disfigurement by pock-marks that complexion was taken as the test of beauty, that the woman whose face was not disfigured by small-pox became of necessity the beauty of her neighbourhood, if only her features were not absolutely commonplace.

To arrest the ravages of small-pox it would seem that from a very early period, in various parts of the world, it had been the custom to inoculate young and healthy individuals with matter from those suffering from mild attacks of the disease, founded upon the common knowledge that one attack of small-pox protects against a second. It would appear to have been a most ancient custom in India, and at the beginning of the eighteenth century the custom was spread through the Mahomedan world, Tripoli, Algeria, Turkey in Asia, Arabia and Circassia. The well-known Dr. Richard Mead explained the beauty of the Circassian women, or more truly the preservation of the same, as being due to the fact that by inoculation by the mild disease in their youth the effects upon the skin were practically nil, and thus they were protected from future ravages of the disease.

It was in Constantinople that that most advanced new woman of her period, the Lady Mary Wortley Montagu, wife of the ambassador to the Sublime Porte, was so much impressed with the value of the method that she obtained an old Greek woman, a professional inoculator, who with Mr. Maitland, the surgeon of the embassy, inoculated her son, and so successful was the procedure that on her return to England she subjected her infant daughter to the same operation.

Lady Mary was well known; the daughter of the fifth Earl of Kingston, she had at the age of eight been named a toast at the Kitcat Club and elected a member by acclamation. She married her husband against the consent of her father, and by special license—a distinctly advanced procedure in those days, both as regards the special license and the paternal consent. She was the friend of Mary Astell, the defender of woman's rights in her day. I mention these facts because perchance I am deterring some of you from attending the debates at the Woman's Congress, and I would not seem to forget the claims of that Congress upon our consideration. The great little poet, Pope, was enamoured of her and then of a sudden developed into a venomous foe. Why he did so has become one of the puzzles of literature. Two rival theories have gained strong support, one that she had borrowed a pair of sheets from him (he had induced the Wortley Montagu family to become his neighbours at Chittenham) and Lady Mary returned the sheets unwashed; second, that she had by her witty and engaging manner led him to the point of solemnly avowing his love to her, whereat she laughed at him loudly and scornfully. Whichever be correct, there is no doubt that he wrote bitter, not to say brutal, things about her, and she managed to circulate abroad stories and lampoons of almost equal strength. She was a great woman in her day, and her advocacy of small-pox inoculation did much to ensure the popularity of the process.

The successful results excited widespread interest, and the method gradually became extensively employed. It is calculated that in England alone up to the year 1758 there had been at least 200,000 inoculations or variolations, while in the latter half of the century the

Suttons, Dimsdale, and others would seem to have variolated thousands of individuals. Dimsdale indeed was invited over to Russia to inoculate the Empress, the great Catherine, and he did this with such success that he was made a baron of the Russian Empire, appointed Councillor of State, physician to her Imperial Majesty, and, in addition to an annuity of £500, was presented with the not inconsiderable douceur of £10,000—truly an imperial gift. But while this process of variolation spread, small-pox at the same time became increasingly frequent. The process, indeed, was essentially dangerous; while it is true that those who were variolated very rarely died, not unfrequently the same could not be said concerning their friends and neighbours, for those who were variolated suffered from the true disease, and were as much liable to be carriers of infection as were the victims of pox by natural means—indeed more so, because the mildness of the induced disease led to a lack of care. Thus it was that towards the end of the eighteenth century small-pox, instead of being stamped out, was more prevalent than ever. It would not seem to be an exaggeration to say that almost every second man was pock-marked.

While this was the case, it had also been recognised among the farming classes, not in Great Britain alone, but elsewhere—sporadically—that milkmaids were specially exempt from the disease; and it was further noted that there was a relationship between this exemption and the fact that these milkmaids had at one time or another been affected with cow-pox, a disease of a vesiculo-pustular nature, appearing in an epizootic form, and showing itself more especially upon the teats of milch cattle. And it is evident that even before Jenner's great experiment there had been occasional inoculations with cow-pox, so as to protect against small-pox. The best authenticated of these cases was that of Benjamin Jesty, a Dorsetshire farmer, who in 1774 inoculated his wife and two sons with virus taken on the spot from the cows of Farmer Elford, of Chittenhall, whither Mr. Jesty carried his family for that purpose; and in 1791 a schoolmaster in Holstein, Peter Plett by name, did similarly. Holstein then as now was a great dairy district, and there, as in the south and west of England, the tradition existed that milkmaids who had been infected with cow-pox were unaffected by small-pox. Thus, having seen a physician practise variolation, Schoolmaster Plett came to the conclusion that he would employ cow-pox lymph, and in the year above mentioned, there being an epizootic of cow-pox in the neighbourhood, he inoculated three children with the virus from a cow. His method was rather crude, he used a pocket-knife and made cuts upon the back of the hand between the thumb and first finger. The operation had the desired effect. Three years later when all the other children of the school sickened with small-pox the three remained quite healthy; but unfortunately the choice of region for inoculation had led to so severe an inflammation that Plett never again ventured to repeat the process. These and yet other observers, it may be, had vaccinated prior to Jenner, but with this difference, that they made no attempt to repeat the process, to establish the correctness of the process by later inoculation with variolous matter, or to spread abroad the beneficial results accruing therefrom. Only after the publication of Jenner's famous "Inquiry" was any attempt made to publish the results obtained. Jenner, on the other hand, having once succeeded, was not satisfied until after repeated attempts he felt assured that he had determined that an attack of induced cow-pox protected from the small-pox. Then, two years after this first experiment, he published the inquiry into the causes and effects of the variolæ vaccinæ, and thereby inaugurated or led to the inauguration of the process of vaccination. That motion can be brought about by the boiling of water may have been known for centuries, but it is not to Hero, of Alexandria, or even to the Marquis of Worcester that we are to ascribe the honour in connection with the discovery of the steam engine, it is to James Watt, to him who applied a knowledge of the properties of steam to the production of the steam engine the honour is due. Hundreds of patriotic Germans may have dreamt of and sighed for the unification of Germany, but the honour and the glory of having brought about that unification is now and must always be Bismarck's. And so in connection with vaccination, while we are ready freely to acknowledge that there were others who inoculated before Jenner, yet it is to his labours and his researches, and to him alone, that the honour and glory must be ascribed, if now-a-days small-pox has almost vanished from our midst, not to mention the further honour of having inaugurated the method of protective inoculation.

So now for a brief sketch of Jenner. He was born in the year 1749, a younger son of the Rev. Stephen Jenner, vicar of Berkeley. He was apparently not very strong as a boy, and his education was conducted partly at home, partly at Cirencester, which is not very far distant; and being intended for the medical profession was, after the good old fashion, bound apprentice to a surgeon at Sudbury. Completing his apprenticeship he went to London, and there became a pupil to him whom we may truly call the father of British pathology, the great John Hunter. And he would seem to have been a favourite pupil, for Hunter recommended him to Sir Joseph Banks to aid him in arranging the collections which he had made during Captain Cook's first celebrated voyage of discovery. One biographer, indeed, states that Hunter solicited Jenner to become his partner; but the old life in Gloucestershire was more to his liking, and he returned to Berkeley, where he soon became the leading practitioner. But at the same time, he did not lose his love for observation, and his publications, more especially a paper upon the habits of the young cuckoo, gained him his F.R.S. It was here at home in Gloucestershire that he learnt the tradition concerning the effects of cow-pox, and set himself to work to collect together what cases he could find of cow-pox having rendered those affected thereby refractory to small-pox. He collected together a considerable number of very clear cases, some of which he tested by variolation, and he found that inoculation of matter taken from small-pox patients constantly was without effect in those antecedently affected with the genuine cow-pox. And the conclusion was forced upon him that it might be possible to propagate the cow-pox by inoculation, not only from the cow to the human subject, but also from man to man. And as the complaint when transferred from the cow to the milker possessed the quality of preventing the small-pox, it seemed probable that this quality might be retained even by propagation of the virus in succession from one human being to another. At length, in the spring of the year 1796, the cow-pox having broken out in a dairy near Berkeley, Sarah Nelmes, a milkmaid, became infected in one hand which had accidentally been scratched by a thorn. Here was an example of the genuine disease, and Jenner selected a healthy boy named Edmund Phipps, a boy who had not suffered from small-pox, and on him on the historic May the 14th he made his first trial. On the seventh day the boy complained of uneasiness in the armpit and had a slight headache. On the following day he was perfectly well, and by now the incision of the arm had assumed nearly the appearance of a part inoculated with variolous lymph. The inflammation subsided, the crust formed and dropped off, leaving a permanent eschar, and six weeks later, on the 1st of July, Jenner inoculated the boy with variolous matter, making numerous punctures and slight incisions on both arms. No effect was produced other than such a slight and transient inflammation as usually ensues after the inoculation of persons who had already suffered from small-pox. Several months later the inoculation was repeated, but without effect. At this period Jenner did not essay to carry on the vaccination from arm to arm, and the epizootic of cow-pox having died out, he had to wait two years for an opportunity to continue his observations. On the 16th of March, 1798, he vaccinated his second case, a boy named Summers, with virus from the teat of an infected cow, and the vaccine lymph was transferred from Summers to William Pead, while from William Pead several children and adults were likewise vaccinated, and from one of this third of the series the lymph was transferred to several others. Several of these persons were next inoculated with variolous pus without effect, and Jenner ascertained that the vaccine lymph in passing through a series of five individuals retained the property of rendering the vaccinated insusceptible to the contagion of small-pox.

These were the cases which were published in the Inquiry, which appearing in the latter part of 1798 created immediately a most profound impression. It is unnecessary for me here to state in detail how Cline, Pearson, Woodville and others immediately took up the process, or how, long before Jenner's death, the process of vaccination had spread all over the world, and he had been the recipient of grants of £30,000 from Parliament, and had been given honorary degrees at Oxford and elsewhere. Already, before his death, the diminution in the small-pox mortality in the leading countries of Europe was very remarkable. Dr. Parr, the greatest of English vital statisticians, has made the following calculations as to the London death rate in periods previous to the introduction of the Registration Act, and Dr. McVail has continued the series up to 1882. No words of mine can be more eloquent than these figures.

With the process of time we have become better acquainted with what constitutes satisfactory and successful vaccination. Jenner held, and his own observations upon those who had accidentally taken cow-pox strongly supported the opinion that a single attack of cow-pox, and consequently a single vaccination, conferred immunity for the rest of life. Before his death this had already become seriously doubted, but it was long before re-vaccination was generally adopted; it was long, indeed, before the first serious attempt was made to enforce vaccination of the whole population in Great Britain; up to 1853 vaccination was optional, and only in 1872 was it made obligatory. Even now at the present day re-vaccination is not enforced for the whole population, save in Prussia. But how effective this is is shown by the following table, or better still by the diagram here copied from the report of the German Vaccination Commission of 1884 in the *British Medical Journal* (for diagram see page 89), showing the good effects in a class of population which is efficiently looked after, namely, the army. For comparison the accompanying diagram shows the small-pox cases and deaths per 100,000 in an army and among a people in which vaccination and re-vaccination are not so rigorously enforced.

TERMS OF YEARS FOR WHICH DATA ARE GIVEN.	REGION.	APPROXIMATE AVERAGE ANNUAL DEATH RATE FROM SMALL-POX PER MILLION OF LIVING.	
		Before Introduction of Vaccination.	After Introduction of Vaccination.
1777-1806 and 1807-1850.	Lower Austria	2,484	340
" "	Upper Austria and Salzburg	1,421	501
" "	Styria	1,052	446
" "	Illyria	518	244
" "	Trieste	14,046	182
" "	Tyrol	911	170
" "	Bohemia	2,174	215
1776-1780 and 1810-1850.	Prussia (East)	321	56
" "	Prussia (West)	2,272	356
" "	Westphalia	2,643	114
" "	Rhine Provinces	908	90
1774-1801 and 1810-1850.	Sweden	2,050	158
1751-1800 and 1801-1850.	Copenhagen	3,128	286

DEATH-RATE PER MILLION IN LONDON AT SUCCESSIVE PERIODS.

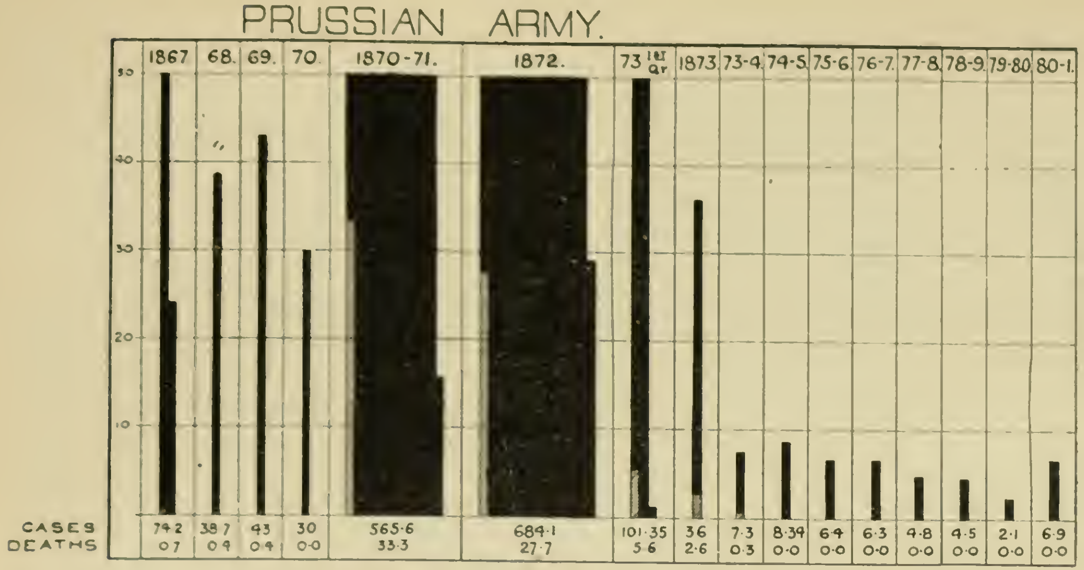
YEARS.	AVERAGE ANNUAL DEATHS FROM ALL CAUSES.	AVERAGE ANNUAL DEATHS FROM SMALL-POX.	
1660-79.	80,000	4,170	
1728-57.	52,000	4,260	Optional Variolation.
1771-80.	50,000	5,020	"
1801-10.	29,200	2,040	Optional Vaccination.
1831-35.	32,000	830	"
1838-53.	24,900	513	"
1851-71.	24,200	388	Obligatory; badly enforced.
1872-82.	22,100	262	Obligatory Vaccination; more efficient.

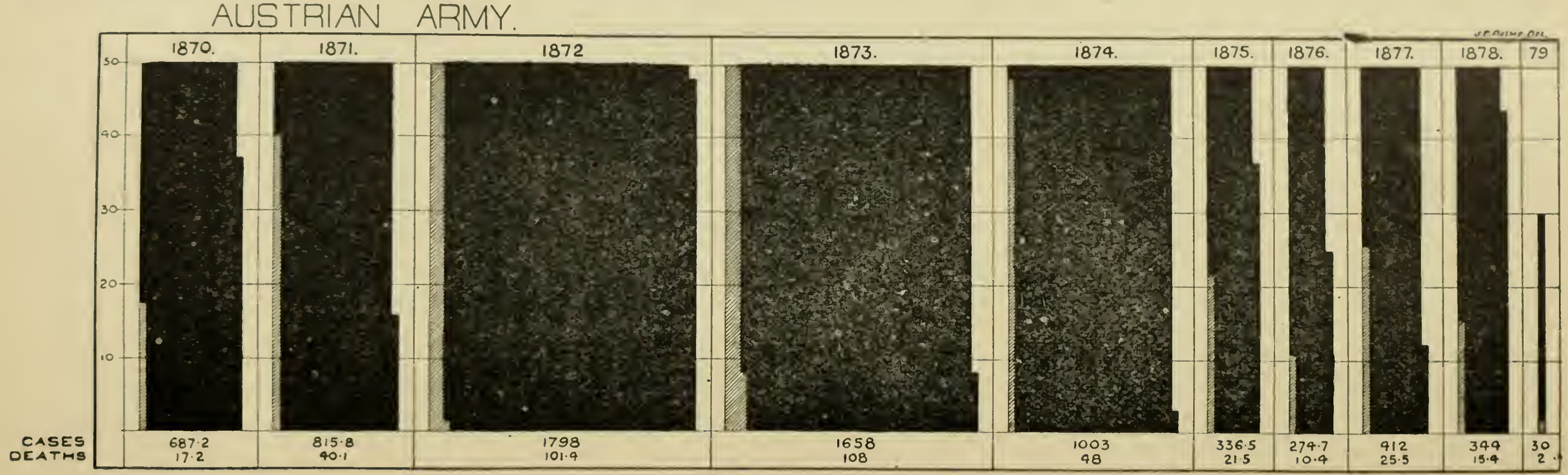
I have not, gentlemen, given you this evening many statistics, but these diagrams, if they were the solitary records we possess concerning the results accruing from proper vaccination, would be sufficient to prove absolutely the enormous benefit to the nation of vaccination and re-vaccination. While upon statistics, I may here, thanks to the great kindness of Dr. Wyatt Johnston in permitting me to use observations and statistics compiled by him and not yet published, say a few words showing the other side of the picture, namely, showing the fatality from small-pox in an imperfectly vaccinated community, to-wit, in this city of Montreal. I might perchance have selected more

DIAGRAM

SHOWING

CASES & DEATHS PER 100,000·





convincing, or rather more satisfactory tables, for it is a matter of notoriety that, thanks to the condition under which we live in this Province of Quebec, it is a matter of peculiar difficulty to arrive at even approximately correct vital statistics. The fact that the records of births and deaths are compiled from returns sent in by religious denominations, and that the duty of recording is in the hands of priests and ministers, who, I believe, receive no adequate remuneration for the work,—this fact alone makes the compilation of vital statistics a matter of peculiar difficulty. I might have chosen fuller statistics from such reports as those of Dr. Barry on the Sheffield epidemic, but the facts here given come close home. I refer to what happened in the epidemic of 1885, which was started by cases which came from Chicago in the beginning of that year; whereas in 1881 there had been five deaths from small-pox, none in 1882, one in 1883, and none again in 1884, in 1885 there were no less than 3,164, the average number of small-pox deaths per 1,000, being 18.9, the percentage of small-pox deaths to deaths from all causes being 40.6. Taking now the analysis by religion and race, we arrive at the following very suggestive table:

MONTREAL.

		French Catholics.	Other Catholics.	Protestants.	Total.
	Population	93,641	29,627	44,223	167,491
1885..	Deaths from all causes..	6,061	877	887	7,825
	Deaths per 1,000.....	64.7	29.6	20.05	46.71
	Deaths from small-pox..	2,887	181	96	3,164
	Deaths per 1,000.....	31.0	6 2	2.1	18.9

We may therefore state that even if now, a century after Jenner's first vaccination, small-pox is not eradicated, the fault does not lie in the incapacity of the process to prevent the disease, but in the incapacity of legislators and peoples to recognize its beneficent effects. It may to enthusiasts appear to be a serious assault upon the liberties of the subject to compel him and his offspring to undergo inoculation with vaccine lymph. But when his neglect to be vaccinated leads surely to the continuance of the disease and to the possibility of disease and death or disfigurement being propagated sooner or later in his neighbourhood, then assuredly the government as representing the nation has a full right to legislate for the safety of the nation as against the personal predilections of the individual. We, here in

Canada, and more especially in this Province of Quebec, cannot but be warned by the grim history that comes to us recently from the county which gave birth to Jenner.

We have learnt other things also during this last century which Jenner at first did not recognise, and first and foremost that there is a possibility, remote it is true, but nevertheless existent, that in inoculating from man to man the diseases to which man is liable may be conveyed and inoculated along with the lymph. We now know that as a precaution against such an untoward event there should be constant return of the virus to the cow, and that calf lymph, and calf lymph only, should be employed. And only within this last year or two the researches of Copeman and Straus have shown that the admixture of such lymph with glycerine leads to the gradual destruction of the microbes in general harmless which constantly contaminate fresh lymph, while at the same time the glycerinated lymph appears not to have decreased but to have increased in activity, thus employing glycerinated lymph that is two months old we can be absolutely sure that we are using a pure and aseptic material.

Despite all efforts a century of vaccination and of study of vaccine lymph has not as yet disclosed to us the specific organism of vaccinia, or, as I have recently shown elsewhere, of the more virulent modification of the disease, namely, variola. We cannot, therefore, state that we have fully mastered, or even that we have begun to master the bacteriology of vaccinia; we cannot cultivate its germ or supply to the public pure attenuated cultures for purposes of inoculation. But this we can say with certainty, first, that a single vaccination protects against small-pox for at least four years and for a longer period in the majority of individuals; secondly, that re-vaccination reduces the likelihood of infection with small-pox almost to nil; thirdly, that the vaccinated and *à fortiori* the re-vaccinated individual, if attacked by small-pox, suffers from a mild and modified form of the disease; fourthly, that the employment of matured glycerinated calf lymph is a means whereby the uncontaminated virus is introduced into the system, so that erysipelatoid and other disturbances can be reduced to a minimum, and when present are due to want of cleanliness on the part of the individual and not to the lymph inoculated.

But, now, what is the essential nature of the process of vaccination and of the immunity conferred thereby?

To answer this question adequately in the few minues remaining is practically impossible; to deal with the subject as it deserves would require a series of lectures. It would imply showing how nearly a century after Jenner made his first vaccination the principles which he laid down were applied to other diseases. It would involve, too, a description of much of the life-work of that French chemist, Pasteur, who with his earliest experiments was to enlighten the world by creating a new science, the science of bacteriology, and through whose influence a new era was to begin in the treatment of disease; for it was Pasteur who first showed in this century that from a study of bacteriology we could learn to combat infectious disease in the most rational manner. His earliest experiments were made on a disease of fowls called chicken cholera, whose germ he discovered and isolated in pure culture. Rapidly following upon this discovery it was found that such cultures when kept for a long time in the laboratory lost their pathogenic power and that fowl inoculated therewith, not only survived the injections, but were apparently thereby rendered immune to the action of his most virulent cultures of the same kind of germ. Here, then, was the beginning for experiments of all kinds in the various infectious diseases. Just so soon as the germ of any disease was discovered the same efforts were made as in chicken cholera to produce immunity along the same lines. It was thus that Pasteur saved millions upon millions of francs to his country by producing immunity in cattle and sheep against that dread and fatal disease of anthrax which had up to that time proved a veritable scourge to farmers in the richest and most fertile territories of the land. The story, however, is doubtless familiar to you all, as are probably also the general features of similar experiments performed on other diseases. It need merely be said here that subsequent to the discovery by Pasteur that cultures of germs might be attenuated with age, other means were soon found of producing the same results and more rapidly. And thus by artificial heat, by compressed air, by exposure to light, by chemical re-agents, etc., the necessary attenuation of germs was easily produced and the subsequent immunity. It was but a step from this to the discovery of the toxines, that is to say, of the fact that bacteria in their growth develop chemical poisons which by a process of careful filtration may be separated in solution from the bacteria whence they have been derived. When later it was found that not only could immunity be induced by inoculation of attenuated germs or of their toxines similarly treated, but that the blood serum of animals so immunised could likewise act both as a preventative and a curative agent, the climax of rational therapeutics was reached. These facts which concern the subject of serumtherapy are too much of the nature of current events to require details of description here to-night. What is, however, of some interest concerns the mode of action of these vital therapeutic agents, and I will conclude with but the briefest reference to this most interesting topic.

Formerly it was thought that an attack of most infectious diseases created an immunity against subsequent invasion of the same germs, by reason of the fact that all the pabulum necessary for these germs had been consumed already ; or that perhaps the germs when once they gained a foothold in the body, produced self-destructive chemical poisons, thus preventing a further development at a subsequent exposure.

The experiments which have proved these theories in all respects untenable, and which have shown that other factors come into play, represent some of the most spirited and prolonged discussions which the medical world has ever been called upon to witness. With characteristic animosity the German and French schools upholding diverse opinions, have found it difficult to agree, though their combined theories have given to most observers all the essential explanations of this acquired immunity. Through the researches of Metchnikoff, of Massart and Bordet, of Nuttall, Pfeiffer and a host of others, we now know that the invasion of the body by micro-organisms is followed by a chemical attraction of certain cells of the host, inducing thus a battle royal between the invaders and the invaded. That not only can the cells destroy bacteria by intracellular digestion, but that where the leucocytes themselves break down or are destroyed, they may give off to the bodily humors in which they lie, certain secretions or excretions which render these humors bactericidal.

It is impossible here in these few moments to make more than a passing reference to this interesting topic ; though as a valuable sign of the times and as an indication of the valuable work which has been done within recent years it cannot be omitted ; and it is but a fitting tribute to the great originator of this valuable means of curing disease, namely Edward Jenner, that this day, the 14th day of May, 1896, 100 years from his celebrated inoculation, should be duly noted in the medical world.

CHRONIC POLY-ARTHRITIS IN A CHILD.

BY

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Whilst acute or sub-acute articular rheumatism is extremely common in children, it is universally admitted that both chronic rheumatism and osteo-arthritis are extremely rare conditions. Cases of rheumatoid arthritis are recorded or referred to by several of the systematic writers on children s diseases.

Henoch (Lectures on diseases of Children), and West (Diseases of Children), each refer to two cases.

Garrod (Gout and Rheumatic Gout) figures the hand and foot of a child of three in which the proximal phalangeal joints are affected.

Osler speaks of having seen three or four cases in children, whilst Howard (Pepper's System of Medicine) and Fagge both refer to its occasional occurrence in early life.

Lloyd Davies (*Lancet*, 1893, II., 928) records a case in a child of six following an attack of acute rheumatism a year previously. The joints affected were some of the smaller articulations of the hands and feet, and also the wrists, elbows and knees.

The following case is still under treatment by Dr. Kirkpatrick at the Montreal General Hospital. I am indebted to Dr. P. C. Leslie for the clinical history.

The patient, a girl of 11 years, was admitted to the hospital March 1st, 1896, for pain and stiffness of the joints.

The mother attributes the onset of the illness to a kick on the right ankle in May, 1892. There was no ill effect at the time, but two months later she began to limp and the ankle became swollen.

The disease was then regarded as of a tubercular nature and a plaster of paris bandage was applied for several weeks in August and again in March, 1893, but without very much benefit.

In the autumn of 1893 the right knee became swollen, followed by the metacarpo phalangeal articulations and a little later by the wrist, left ankle and left knee. After Christmas the child was unable to walk. She has since then been confined to bed and the legs have gradually become drawn up and contracted. The neck became painful and the head twisted to the left in December. The swelling passed away from the joints in 1894, leaving them stiff and useless.

Early in 1894 she had an attack in which there was loss of power and sensation in the right arm for three months, but not accompanied by pain.

There is a history of frequent exposure to cold and starvation. There is no rheumatic or tubercular history in the family.

Present Condition—The child is well nourished and of good colour; pulse 108; temperature 99°; respiration 24. The head is turned downwards and to the left side; there is marked diminution in the rotatory movements of the head with rigidity of the left sterno-mastoid and trapezius muscles; flexion and extension are free. The joints affected are the wrists, elbows, ankles and a few of the small phalangeal joints of the fingers and toes. Many of the joints are painful and tender. The wrists are slightly flexed and swollen There is much rigidity and stiffness and the movements are greatly limited, flexion and extension being performed through a few degrees only. The right elbow is stiff, it cannot be extended beyond a right angle and there is a slight crepitating sensation on movement. In the left elbow there is also diminished movement, but to a much less extent.

In the lower extremities the hips and knees are contracted. Both ankles are thickened and rigid and the right foot much everted and flat.

The proximal phalangeal joints of the first, second and third fingers on the right side and the corresponding joints of the first and second fingers of the left hand are swollen, thickened and give the impression that the bones are enlarged. The Roentgen photograph, however, shows that the bones are normal and that the thickening is therefore confined to the soft parts. The left thumb as shown by the photograph presents a forward dislocation of the two terminal phalanges. To the touch the dislocations give the impression that there is a bony outgrowth in the neighbourhood of the joints. Some of the fingers have a slight deflection to the radial side, and the terminal phalanx of the right middle finger is freely movable from side to side. There are no Heberden's nodes. The skin over the backs of the wrists and hands and on the front of the ankles is glossy and tense.

The heart, lungs and other organs are normal. The urine contains neither albumen nor sugar.

The patient has now been in the hospital for three months, being treated with iron, cod-liver oil and gentle extension of the lower extremities. There has been marked improvement in the movements of the hand and head and she can now use the fingers for sewing or rolling bandages.

The pain and tenderness have almost entirely disappeared. The course of the disease has been a febrile throughout.

The presence of nodular bony elevations about some of the small joints of the hands at first led to this case being regarded as one of osteo-arthritis, but by the help of the Roentgen photograph it would appear that the bones are not altered, and that an osseous enlargement is simulated by dislocation of certain bones and thickening of the tissues. Owing to the absence of any changes in the bones it is perhaps more correct to regard this case as one of chronic rheumatism rather than rheumatoid arthritis.

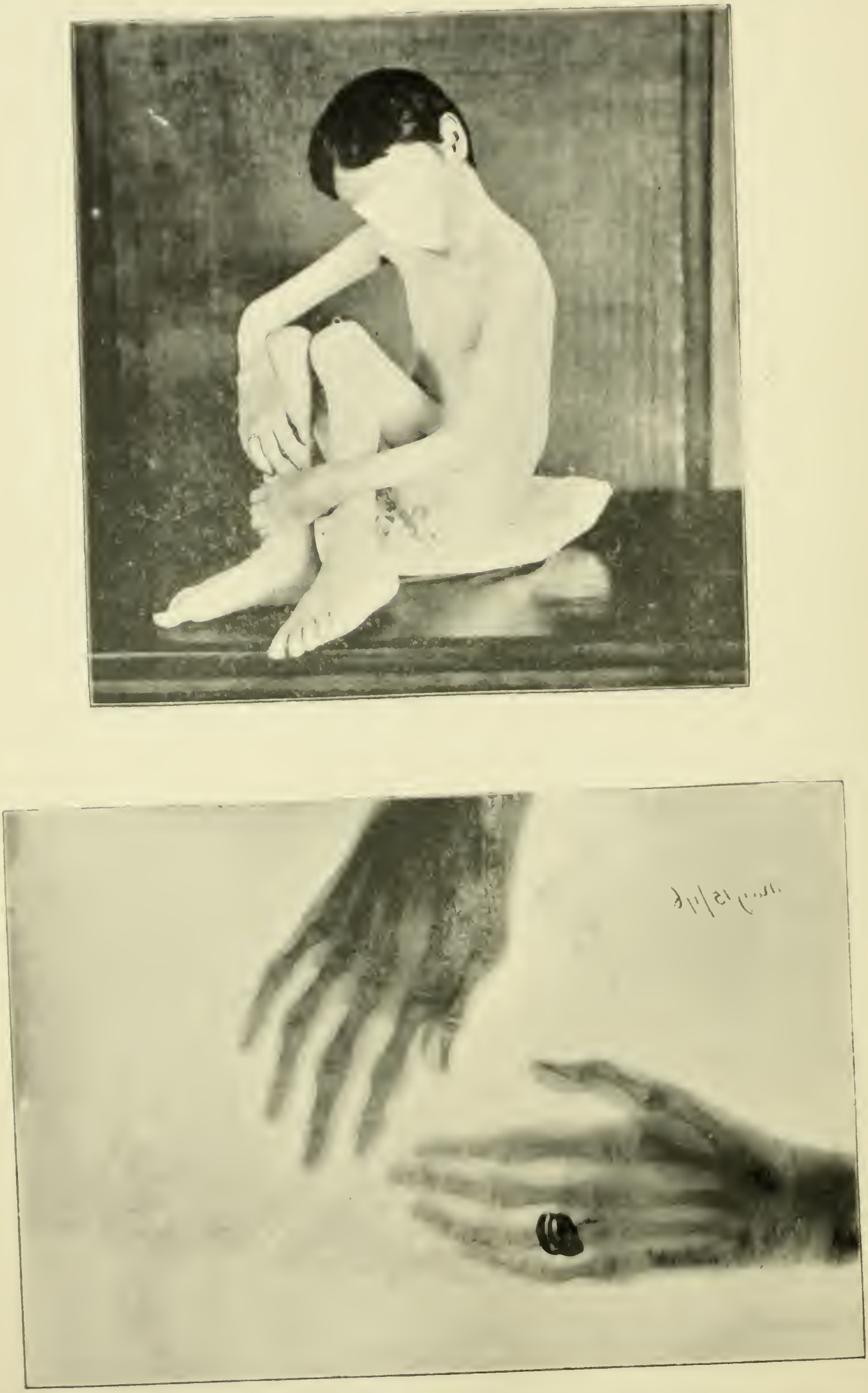
In the absence of any definite known etiological factor it is not easy to draw a sharp line between chronic rheumatism and rheumatoid arthritis. It is indeed an open question whether these diseases are distinct or merely different manifestations of the same cause.

Osler defines osteo-arthritis as a "chronic disease of the joints characterized by changes in the cartilages and synovial membranes with *peri-articular formation of bone* and great deformity." On the other hand, Hutchison states that bony outgrowths are rare in young people and if present usually of small size.

In its clinical features this case corresponds closely to the description of chronic ulcerative rheumatic arthritis or crippling rheumatism given by Jonathan Hutchison *(Illustrations of Clin. Surgery).* In this condition a large number of joints are affected at the same time, the onset is sub-acute at its outset, attended by a good deal of swelling, and it affects more especially the small joints of the hands and feet. Whilst true arthritis deformans shows a marked preference for the senile period, this form may be found at any age, and often before middle life. Very often partial dislocation of the joints involved is produced and the consequent deformity mistaken for bony enlargements.

Anatomically the changes consist of fringes and velvety thickening and blood staining of the synovial membrane, thinning and absorption with patches of erosion on the cartilages.

In conclusion I must express my indebtedness to Dr. Kirkpatrick for this case and to Professor Cox for the Roentgen photograph.



CHRONIC POLY-ARTHRITIS IN A CHILD.

TWO CASES
OF
CHRONIC ARTHRITIS DEFORMANS IN YOUNG CHILDREN.

BY

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Resident Physician to the Royal Victoria Hospital.

Cases of arthritis deformans in children under ten years of age appear to be very rare. Strümpell in his Text-book of Medicine mentions that he has only met with a few cases between the ages of 10 and 15. Osler mentions having seen only four cases in childen under 12 in five years experience. Recently, in the March number of the *Archives of Pediatrics*, Koplik has reported a typical case in a child of seven. The cases here reported were both in the Royal Victoria Hospital in Dr. Stewart's wards. The second case, a child aged 6, is very striking as the joint involvement began at the early age of two years.

CASE I. Mary C., æt. 9 years. Always healthy with the exception of an attack of whooping-cough three years previously, No history of any similar affection or chronic disease in the family. The child entered the Royal Victoria Hospital on May 30th, 1894.

The history obtained was that the child first began to suffer about one year previously. The first thing noticed was a scaly eruption upon the chest, limbs and back (psoriasis). Almost at the same time the child complained of cold extremities, with stiffness of the fingers. On attempting to walk she complained that her ankle was painful. Later on she felt severe pain and stiffness in both shoulders. The pain was not constant, but was exacerbated during change of weather. The stiffness of the joints, however, persisted and gradually got worse. The child also lost flesh. On admission the physical examination was as follows :

Patient slightly emaciated, not specially anæmic. Temperature, 97.2° ; pulse, 90 ; respiration, 24. Complained of slight fleeting pains in the limbs when she walked. Cardiac dullness reached on the left to a point one-half an inch outside the nipple line in the 5th space. First sound at apex was accompanied by a soft blowing systolic murmur, which was transmitted towards the sternum. Pulmonary second somewhat accentuated. The hands were claw-like owing to the inability of the patient to extend the terminal phalanges of the fingers. All the joints of the fingers were prominent and enlarged, being of a pearly white colour. The second metacarpal bones of each hand were enlarged and prominent. There was wasting of the interossei. On the tendons of the flexor carpo radialis and palmaris longus of the left arm were about a dozen nodes about the size of a hemp-seed. On the lower extremities both internal malleoli were considerably enlarged and the tarsi thickened. Slight enlargement of the proximal end of the first phalanx of the left third toe. There was slight stiffness about the shoulders, but no obvious deformity. There was no redness or heat about the affected joints, but they were painful on movement. There was an eruption of psoriasis about the extensor surfaces of the knees and elbows, also about the ears and nose.

During the time she was under observation the temperature was, on the whole, slightly above the normal, and the pulse averaged about 90. The case was unaffected by treatment.

CASE II. Christina H., æt. 6 ; admitted on March 3rd, 1896. In this case there was a strong tubercular family history. One aunt died of phthisis. The mother was in the hospital at the same time as the child with a tubercular knee (?) One brother had psoas abscess.

The history was that when the child was two years old she began to suffer with pain in the left knee, which gradually became enlarged. A little later the joints of the fingers became painful and swollen. One year later the right knee became enlarged, the other joints remaining as before. The pain and swelling varied in intensity from time to time. When five and a half years old, swelling and pain in both ankles were noticed, and a little later still the child began to complain of pain in the wrist and in the left shoulder.

On admission the patient was found to be a small, poorly-nourished child. Moderately anæmic. Lungs normal, heart normal. Very marked rheumatoid lesions were present. All the articulations in the middle and ring fingers of both hands were considerably enlarged. In the terminal phalanges especially there was distinct bony overgrowth, giving an appearance as of nodes. The metacarpo-phalangeal joints of the first and second fingers of both hands were similarly enlarged. There was marked interosseal wasting. Distinct impairment of the power of extension of the left elbow-joint was noted, but there was no obvious deformity

The left knee was much enlarged in every direction, there being evidence of effusion into the joint. The joint could be flexed and extended completely without crepitus or causing pain. The right knee was similarly affected, but to a much less extent. The muscles about the knee-joints were somewhat atrophied. There was also distinct prominence of the lower end of the left fibula, giving the ankle a full appearance. No pigmentation was anywhere noticed. While under observation she complained of no pain. Temperature was usually between 98° and 99°. Pulse averaged 100. There was considered to be a possibility of this being a case of tubercular arthritis when first seen, but the onset of the trouble, with the slow involvement of one joint after another, the symmetrical distribution of the lesions, the multiplicity of the joints affected, and the muscular atrophy, all rendered it certain that the case was to be placed in the category of chronic arthritis defornans. The character of the lesions themselves was perfectly typical of this disease.

NOTES UPON A CASE OF MULTIPLE ABSCESSES OF THE LIVER, ASSOCIATED WITH PURULENT BRONCHITIS AND INTERSTITIAL PNEUMONIA; ABSCESSES IN THE SPLEEN AND PANCREAS.

BY

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The case about to be recorded is in the main of interest because of the relationship between the morbid conditions noted in the title of this article. For the clinical report I am indebted to Dr. W. G Reilly, Resident Physician to Dr. Stewart at the Royal Victoria Hospital.

The patient, a man aged 38, had been a labourer and exposed to all sorts of weather. He gave an alcoholic history. Six years ago he suffered from a left-sided pneumonia and pleurisy. From this attack he never completely recovered; he managed to perform his daily duties, although unable to do heavy work, and he was troubled with a cough. Two years ago he practically gave up work altogether, but kept up and about, although his condition was steadily becoming worse. In November last he took to bed, the cough had been very troublesome and the expectoration profuse, while there was progressive weakness and loss of flesh. In the last few months the patient had repeated chills, followed by sweats, especially at night.

Upon admission to the hospital (March 10th, 1896,) the patient was emaciated and haggard, sleeping poorly on account of the cough, with difficult respiration and a horrible fetor of the breath. There was well marked clubbing of the fingers. He complained of no pain. The left side of the chest was found much flattened, with very little movement, and there was a dull note upon percussion. On the right side the breath sounds were harsh, but otherwise normal; on the left side the breathing was feebler than normal at the apex, blowing in the axilla, while all kinds of moist râles accompanied respiration. The sputum was profuse, purulent and fetid, containing no recognisable tubercle bacilli. The odor of the breath was so foul that prolongued examination of the patient was a severe task; even when he was placed in an isolation ward the odour from him spread over a wide neighbourhood. Nothing very definite was discovered in connection with the digestive system; examination of the abdomen gave negative results; the bowels were regular.

There was progressive failure until death ensued upon the ninth day after admission ; the temperature had continued febrile with slight remissions, the respirations remained about 34, the pulse varied between 112 and 130.

At the autopsy performed 28 hours after death, the body was found to be that of a very gaunt, emaciated male adult. The fingers were clubbed ; the left side of the chest was flattened above the 4th rib. The *right lung* was firmly adherent along the line of the 3rd and 4th ribs, but the apex was free. The upper lobe presented multiple lobular abscesses, with gangrene. The middle lobe was less involved, the lower lobe was crepitant, congested, but free from foci of pus so far as could be seen by the naked eye ; there was some bronchiectasis, and foul grey fluid poured out of the cut bronchi. Weight of lung 880 grammes.

The *left lung* was much heavier (weighing 1345 grms,) with extensive and firm adhesions from the fifth rib upwards all along the posterior aspect, up to and including the apex. The upper lobe was greatly disorganized, with numerous cavities and areas of breaking down. Close to the apex, in fact right above it, was a fairly large smooth-walled cavity which was evidently extra-pulmonary, its walls being formed by the pleura, both visceral and parietal, with the adhesions between the two ; this communicated with the underlying intrapulmonary cavities. The *heart* presented little worthy of note, beyond brown atrophy. The right bronchus, near its origin, presented a well marked linear ulceration eroding to the cartilage, the peribronchial and periœsoaphageal glands were greatly enlarged, dark and moderately firm ; there was no sign of caseation or other evidence of tuberculosis in them. Upon opening the *abdomen* there was evidence of old general adhesive peritonitis, with a displacement of the colon, stomach and liver. Between the spleen and the stomach there was necrotic tissue with abscess formation and adhesions. On separating these adhesions while removing the *spleen*, pus exuded from this area, and there was further seen a small perforation of the size of a quill, in the stomach, around which were some moderately firm adhesions, preventing the escape of the gastric contents. Another area of perforation, about 3 cm. in diameter, was present where the spleen impinged upon the diaphragm. This extended into the substance of the spleen, and superficially into the diaphragm, but not through it. The spleen was soft and flabby, its upper extremity presented a large subcapsular abscess, the size of a walnut, and from this there were a few branching tracts of suppuration, leading a few centimetres into the spleen tissue. Thus smaller foci of pus were ranged about the main abscess. This subcapsular abscess communicated with the suppurating area between the spleen and diaphragm, and the arrangement of the various parts was such that evidently the abscess had started within the spleen substance, and secondarily had burst through or extended through the capsule, the affection of the diaphragm being relatively recent. The spleen gave the amyloid reaction (sago spleen). The *pancreas* was large, somewhat reddened and contained within its substance a large abscess, 1.5 cm. in diameter, situated near to the tail of the organ and close to the splenic vessels; a soft clot existed in the splenic vein alongside of which was situated the abscess. The *liver* was large, weighing 2340 grm., the upper aspect of the right lobe presented two slight fluctuating nodules situated towards the left side of the lobe. A similar but larger bulging mass was present at the lower extremity of the enlarged right lobe. From the lower aspect of the lobus spigelii was a similar discoloured patch with fluctuation On section the organ in the main was moderately pale, and presented very numerous large and small abscesses filled with glairy pus, in some the colour was grayish, in others bright yellowish-green. The largest mass of these abscesses was an aggregation beneath the upper surface of the right lobe, forming in some parts cavities the size of a walnut; in others, characteristic aggregations of smaller cavities, surrounded by very deeply congested liver tissue, and having an oval outline. On further dissection, many of these larger cavities could be seen to be arranged along definite tracts and in close proximity to the bile ducts.

Fresh preparations of the pus showed only a moderate number of pus cells present, with fat globules and crystals. A large number of various kinds of cocci and bacilli were present. The other organs of the body presented little calling for remark; the portal vein was free; the *kidneys* showed a condition of parenchymatous nephritis, with but slight amyloid reaction in the cortex.

A *microscopical examination* of the various organs showed that the lungs were the seat of well marked interstitial pneumonia, with numerous foci of necrosis. There was no sign of tuberculosis in any of the numerous portions examined; the spleen presented a very advanced condition of amyloid change. Sections through the *pancreas* in the neighbourhood of the abscess showed a very interesting condition. There was a lateral thrombus in the splenic vein of a suppurative nature; while the wall of the vessel immediately beneath this showed extensive infiltration, with small round cells. Whether this thrombosis is sufficient to explain the production of an abscess in the pancreas immediately outside the vessel, or not, I feel a little hesitation in stating positively. Such is possible, but I should have expected to have found the thrombus presenting a more extreme pyæmic condition than was noticeable in this case. The pancreatic tissue itself, beyond showing a richly nucleated condition of the alveoli, presented two or three foci of adenomatous change—small and limited areas presenting the appearance of a medullary carcinoma, with singularly small amount of interstitial stroma. I speak of these as being adenomatous, inasmuch as I have met with somewhat similar little foci in other cases in which, as in this, there has been no evidence of malignant disease in other organs.

The liver showed in parts great congestion of the capillaries with atrophy of the cells and further evidences of retention of bile pigment. Scattered through the substance were moderately small abscesses, whose centres showed complete necrosis of the cell elements ; while at the periphery of each was a thick zone of small cells with fragmenting nuclei. The paucity of cells in the pus from these abscesses, to which reference has already been made, was evidently due, not to the fact that there had been little migration of leucocytes, but to the ensuing necrosis.

Remarks.—It would appear that all the conditions here described are closely connected, and that we have in this case a chain of conditions following one after the other from a condition of delayed resolution with acute lobar pneumonia. The condition of the lungs, instead of being as suspected, one of tuberculosis (although it must be acknowledged that the failure to discover the tubercle bacilli had rendered this a doubtful diagnosis) was one of interstitial pneumonia and bronchiectasis, passing on to fœtid bronchitis, gangrene and gangrenous cavitation. Sections of the lung tissue showed no evidences of tubercles. Following upon the destruction of the lung tissue there had finally been developed not only the amyloid degeneration of spleen and kidney, due to the chronic purulent bronchial discharge, but also a condition of general sepsis, with, it would appear, septic embolism in the spleen and development of the splenic abscess which eventually extended so as to become subdiaphragmatic also : from this abscess the suppurative micro-organisms found their way along the splenic vessels, setting up, it may be by the lymph channels, abscess formation in the tail of the pancreas, and by the vein leading to septic embolism in numerous branches of the portal vein. It is difficult to state, indeed impossible to state positively, what was the organism associated with these abscesses, the autopsy having been performed too long after death. Not improbably the pyogenic cocci were the cause

SEPTIC INFECTION IN TYPHOID FEVER. WITH REPORT OF A CASE.

BY

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The subject of septic infection, not only in typhoid fever, but in other specific infectious diseases, is one which has attracted much attention in the last five years, and a great deal of work, experimental and otherwise, has been done upon it, chiefly at the Pasteur Institute in Paris. Cases of septic infection in typhoid are sufficiently rare in ordinary experience to warrant record, the more so as many cases already recorded have been very inadequately described and are comparatively valueless.

The rarity of such cases may be inferred from the fact that in Osler's statistics of 229 cases *(Johns Hopkins Hospital Reports*, Vol. IV., No. 1) there is no case of general sepsis reported, and in the records of the Royal Victoria Hospital for the last twenty-seven months, comprising 185 cases, the case here reported is the only one that was definitely proved to come under this class.

Under the head Typhoid Fever three main types of cases must be recognised. The first class consists of the ordinary typhoid fever as it is known to the text-book. Under certain circumstances the bacillus of Eberth gets into the circulation in such quantities as to give rise to a general septicæmia or septico-pyæmia, and sometimes to certain local effects. In persons recently dead from typhoid it is usually possible to cultivate the specific germ from the ulcers, mesenteric glands, spleen, liver, kidneys and bone marrow. It is a well-known fact that the B. typhosus remains in the body for a long time after the symptoms have subsided. As late as the seventh week Quincke found it in the bone marrow, and Welch found it the bile of a rabbit that had been inoculated four months before. It has also been found in pus in a case of periostitis as late as a year after the original infection. It seems probable, then, that the bacillus must attain its wide distribution in the organism through the blood-stream. Yet it is not invariable to find the bacillus in the blood ; on the contrary the discovery is peculiarly rare.

Flexner explains this fact by the germicidal action of the blood. While no doubt the serum of blood removed from the body possesses such powers, it by no means follows that the plasma during life possesses the same properties. It seems more probable that the bacilli in the blood are killed by the changes induced in the blood by its removal, or else the large majority of them are, as it were, strained out of the blood by the various organs and do not multiply in it where actively circulating. If from any cause the bacilli should enter the circulation in large numbers we get the clinical picture of general septicæmia, great prostration, delirium, sweating, rigors and irregular pyrexia, just as in a case of general infection with the ordinary pyogenic organisms. Besides this certain local manifestations are met with.

In typhoid fever the brunt of the disease falls upon the lymphoid tissue, with the greater intensity the nearer to the focus of infection, that is to say, the intestinal glands. There is then a tendency to the proliferation of lymphoid tissue everywhere, and small collections of round cells are found, notably in the liver of typhoid cases, recognizable microscopically and even by the naked eye.

Reed, in a recent paper in the *Johns Hopkins Hospital Reports*, points out that these collections of cells are associated with cell necrosis, and in some cases he has found evidence of the formation of fibrous tissue. These observations have also been confirmed by experimental inoculations. These areas of necrosis do not seem invariably to be associated with the presence of bacilli. Liebermeister long ago noted the tendency in typhoid fever to the production of parenchymatous degeneration, and mentions that this may be followed by rupture of the muscles, muscular abscesses, parotitis, liver abscess, and the hæmorrhagic diathesis. It seems not unlikely, then, that in a prolonged case, when the original infection has been intense and the resisting power of the patient impaired by mal-assimilation, diarrhœa, and so on, that the cell degeneration may become so great as to cause extensive inflammation ending in suppuration. That the typhoid bacillus can cause suppuration is amply proved.

In 1887 Ebermaier obtained pure cultures of the typhoid bacillus in two cases of suppurative periostitis; in 1889 Orloff found it in a periosteal abscess. Achaline also reports a case. Flexner and two others found it in a splenic abscess. Chiari, and Gilbert and Girode have seen it causing purulent cholecystitis. Carbone, Vincent and Girode have found it causing ulcerative endocarditis. Lesage has found it in pure culture in suppurative adenitis. A few cases are recorded where the B. typhosus caused suppurative arthritis. Martin and Robertson have recently described a case of suppurative arthritis of the wrist occurring in a case at the Royal Victoria Hospital.

Flexner has recently reported a case of a general typhoid septicæmia associated with suppurative parotitis. He obtained the typhoid bacillus from the blood, lungs, mesenteric glands, spleen, bone marrow and kidneys. Streptococci were found in the parotid gland and in the lungs. Multiple abscesses were found in the kidneys.

A third and very interesting class of cases come under the head of "secondary" or mixed infections. The co-existing development of several pathogenic germs in the same patient is a well known phenomenon in other diseases besides typhoid, as for example, in tuberculosis (Koch), scarlatina (Raskina), tetanus (Vincent and Vaillard), cholera (Metchnikoff), and variola. The whole subject of these mixed infections is a very interesting and important one, inasmuch as these secondary germs play an important rôle in the development and course of the original malady. Such secondary infections often mask the symptoms of typhoid and always render the prognosis very grave.

These cases naturally fall into two groups, the first, where the organism is simultaneously attacked by the bacillus of Eberth and some other germ, and the second, when the secondary infection is an incident in the course of an attack of typhoid fever. The latter is more often the case. Such cases run an atypical course and clinically are marked by the following signs: Intense prostration, stupor, at times low delirium, subsultus, lividity, high temperature, chills and local manifestations of the septic process. Most of these signs may of course be found in a severe attack of ordinary typhoid, but are certainly very exceptional in those cases treated early by the bath method.

As a rule secondary infection is more apt to take place in the ambulatory form and in those cases which are complicated with diarrhœa and great prostration, and protracted convalescence. The germs most usually found are the streptococcus and staphylococcus albus and aureus, pneumococcus, bacillus coli communis, and bacillus tuberculosis. It would seem, and this is confirmed experimentally, that the blood of a typhoid patient is a specially good culture medium for the growth of the germs just mentioned. The most usual point of entrance is the intestinal ulcers, but absorption may take place from the mouth and pharynx, skin abrasions and possibly from the bladder and urethra. This is quite possible when we remember the number of bacteria that can be found in the gastro-intestinal tract even in health. Von Besser found the streptococcus seven times in the saliva of eighty-one persons, and in cases of mixed infection. Vincent found it in the fæces three times out of seven. When these germs gain an entrance the manifestations of their action may remain purely local or again may cause a generalised septico-pyæmia.

Vincent, in a communication to the *Bulletin de la Société Médicale des Hôpitaux*, Nov. 13th, 1891, referred to the relative frequency in man of mixed infection with B. typhosus and streptococci, and pointed out that the prognosis in such cases was more grave than those in which the staphylococcus was present. In pus of abscesses in 41 cases of typhoid, Vincent found the staphylococcus pyogenes aureus alone or with staphlycoccus albus in 32· All recovered. In eight cases he found the streptococcus either alone or with the typhoid bacillus. Five cases died.

According to Vincent in 31 autopsies on typhoid cases the streptococcus and B. typhosus were found six times. The following is an abstract of the cases:

CASE I. Death on 23rd day. Otitis media purulent. Streptococci and B. typhi in large quantities in blood and viscera.

CASE II. Death on 25th day. Angina on 20th. B. typhi and streptococci in spleen, liver and mesenteric glands. Streptococci in pharnyx, cervical glands on left side and in blood.

CASE III. Death on 23rd day. Erysipelas of face on 17th day. Foci of suppuration in kidney. Streptococci in erysipelatous patch, glands of neck and all viscera. B. typhi in spleen.

CASE V. Death on 22nd day. Angina on 20th day, with superficial slough on uvula. Abundant streptococci in pharynx, glands of the neck, spleen, liver and blood.

CASE V. Two areas of suppuration in the spleen. B. typhi and streptocci in all viscera and in meningeal exudate.

CASE VI. General purpura, lasted 12 days till death. Peyer's patches normal. Streptococci in blood. All viscera gave B. typhi and streptococci.

This last case is specially important as it shows that, like B. tuberculosis, which can produce septicæmia without characteristic tubercles (experimental tuberculosis of Yersin's type), the bacillus of typhoid can produce general septicæmia and death without the characteristic intestinal lesions.

Vincent describes an interesting series of experiments which he made on the subject of mixed infections. Five rabbits which he inoculated with pure cultures of B. typhosus all recovered. Of five inoculated with streptococcus alone one died. Of five inoculated with both B. typhosus and the streptococcus one recovered and four died in from 56 hours to 39 days. Three presented hæmorrhagic swelling of the Peyer's patches with swelling of the mesenteric glands and spleen In all cultures of both germs were obtained from the organs. In the rabbit which lived 39 days none of the above signs were present and no cultures were obtained.

Vincent has also shown experimentally that in the rabbit after inoculation with the B. typhosus alone we get in seven hours a great increase in the polynuclear leucocytes, reaching a maximum at the end of 20 hours. In case of inoculation with the B. typhosus and streptococci the opposite occurs, and at the end of 24 hours the leucocytes are almost absent and there is nothing but cellular debris to be seen. This seems to prove that the ordinary means of defence which the body possesses are almost powerless to protect against these mixed infections. Besides this systematic infection many local lesions have been described either due to the B. typhosus alone or to a mixture of organisms. The following have been reported: Skin abscesses, abscess of the liver, pancreas, spleen, kidneys, parotid gland, thyroid, muscles and mesenteric glands, suppurative orchitis and epididymitis, suppurative meningitis, suppurative proctitis, purulent pericarditis, pyothorax, malignant endocarditis, purulent cholecystitis, perinephritic abscess, suppurative otitis media, facial erysipelas, suppurative arthritis, osteitis and periostitis, membranous pharyngitis, pyuria.

The following case of typhoid with general mixed infection is of interest on account of its rarity:

Case.—William B., æt. 30, entered the Royal Victoria Hospital on December 5th, 1895. I am indebted to Dr. A. A. Robertson for the clinical history of the case.

The patient first began to feel ill about six weeks before admission. Once or twice a week he felt feverish and out of sorts, with headache and poor appetite. On one occasion his nose bled. This condition lasted for about three weeks, until November 18th, when he was compelled to go to bed. The symptoms at that time were headache, feeling of heat, anorexia and constipation. These symptoms persisted after admission, except that diarrhœa replaced constipation. On admission he was found to be a fairly well-nourished man, apparently very ill and drowsy. Temp. 104·8°, pulse 120, resp. 24. The skin was slightly livid.

Digestive System—Tongue swollen, rough and heavily coated in the centre, with red edges. Bowels loose and the stools were yellowish and liquid. Abdomen considerably distended generally. Slight tenderness in right iliac fossa. A few doubtful rose-spots were present. Liver palpable; spleen easily palpable.

Circulatory System—Pulse rapid, dicrotic, and capillary pulsation in fingers.

Heart—Apex beat in fifth space just inside nipple line. First sound at apex rather muffled. Both second sounds accentuated.

Urine—Clear, acid, high-coloured, sp. gr. 1020. Considerable albumen. No sugar.

The clinical course was as follows:

Dec. 12.—Patient up till this day has been in the same condition as on admission. Forty-three baths have been given. Cyanosis has deepened. Tongue very dry and saliva very tenacious. The right half of tongue is distinctly swollen. On the left side of the soft palate is a greyish membranous patch which peels off readily and does not leave a raw surface. A culture was made. Uvula and pharynx red and swollen and show some whitish spots.

Dec. 13.—Growths from the patch yielded micrococcus tetragonus, and a few short, straight bacilli, not resembling B. Lœffleri. The patch on the left side is as before. On the right side of the uvula is a grey patch about one-quarter of an inch in diameter. A portion was removed and proved to be membranous, about 5 mm. thick. On the under surface was the appearance of hæmorrhage; cultures were made from this. The right half of the tongue was much more swollen than before, red and glazed. Friction sounds were heard in both axilla, also there were signs of broncho-pneumonia.

Midnight.—Respirations 60, pulse 152, temperature 104·2°. Grey patch in the throat has disappeared. Culture made from blood.

Dec. 14—The patient died suddenly at 7.10 a.m. When seen a few moments after, the dependent parts of the body were already deeply blood-tinged and bluish.

Cultures from the throat gave the same germs as before. The blood yielded an abundant mixed growth of streptococci, staphylococci and two bacilli, one about the size of, and conforming to, the tests of B. typhosus; the other was a very large, thick bacillus, of which the character was not absolutely determined.

AUTOPSY—(Performed by Prof. Adami seven hours after death)—Post-mortem rigidity complete.

Lungs—Acute dry pleurisy, with areas of broncho-pneumonia. These areas were more frequent towards the apices than at the bases. Bronchi injected. Peribronchial glands normal.

Heart—Slight degree of brown atrophy.

Liver—Of moderately pale carmine colour, with darker mottlings. Lobules not recognisable. No necrotic areas. Slightly friable. Considerably enlarged.

Spleen—Enlarged. Capsule tense. Spleen substance soft.

Pancreas—Nothing noticeable.

Kidneys—Cortex swollen and calices reddened.

Mesenteric and Retro-peritoneal Glands—Enlarged and moderately soft.

Tonsils—Suppurative follicular tonsillitis.

Tongue—Right half swollen, red and glazed. On section, showed hæmorrhages and small abscesses. The disease was more marked anteriorly, but there was disturbance even to the extreme posterior part.

Larynx—Mucosa reddened.

Ileum—Walls peculiarly thin, pale and atrophied. Peyer's patches in the upper part showed no change. Lower down, while not injected, they presented occasional pale (healing) ulcers with smooth bases and thin edges. Lower down still there was slight injection; 75 cm. above the ileo-cæcal valve was a much injected patch 5 cm. long, still, however, thin and flat. Below this the injection continued and the flat ulcers were fairly frequent. In every case the ulcers were healing.

Colon—As far as the sigmoid flexure rare ulcerated solitary follicles occurred with overhanging edges and sloughy bases.

MICROSCOPICAL EXAMINATION—*Tongue*—Papillæ show hæmorrhage in their substance; considerable superficial necrosis with early abscess formation at their bases. At the apex of some of the papillæ hordes of bacteria are seen; in deeper structures of the tongue are multiple embolic abscesses. Muscular tissue infiltrated with small round cells and showing fœcal necrosis. Streptococci and staphylococci noted.

Spleen—Marked congestion. A few isolated bacilli. Some hæmorrhages with old blood pigment. Considerable increase in splenic corpuscles.

Liver—Atrophy of the liver cells and infiltration of small round cells in parts. A few scattered bacilli which stain rather better at the ends than in the middle.

Pancreas—Areas of necrosis.

Kidneys—Parencymatous degeneration affecting chiefly the convoluted tubules. Congestion. Here and there areas of small round celled infiltration.

Lungs—Septic embolic broncho-pneumonia. Streptococci and staphylococci present.

Testicle—Parenchymatous orchitis. Great congestion. Some blood pigment in interstitial tissue.

Tonsil—Crypts lined with cellular exudate, some of which is breaking down; great congestion. Crowds of bacteria superficially situated.

Recti—Striæ hazy. Muscle cells irregularly swollen. Multiplication of nuclei.

Cultures were taken from all the viscera, from the tongue abscesses, and from the blood. All the cultures gave mixed growths of streptococci and staphylococci. The cultures from the spleen, in addition, showed a short thick bacillus with rounded ends, actively motile, which corresponded to the B. typhi in every respect, except that it turned litmus agar red, although it did this but very slowly. The colonies were characteristic.

From the tongue, in addition to streptococci and staphylococci, was obtained the colon bacillus.

A CASE
OF
INFECTIVE ENDOCARDITIS IN TYPHOID FEVER.

BY

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A case of typhoid fever, with the fatal complication of ulcerative endocarditis is, I think, sufficiently uncommon to merit being placed on record. Osler, in his Text-book on Medicine, quotes the Munich records of two thousand post-mortems on typhoid fever, in which eleven presented this complication, while in his own experience he had met with it but twice.

The history of this case, as nearly as can now be obtained (most of the records were in the hands of the late Dr. Saunders and are not now attainable), is as follows:

I. DeW., male, aged 21, was admitted to Sampson ward, Kingston General Hospital, under the care of Dr. H. J. Saunders, on September 26th, 1895. He had been ill for about ten days previously, and on admission was quite weak, and had a temperature of $104\frac{1}{5}$° F., and pulse 108. There was marked abdominal tenderness, and a few scattered rose coloured spots were detected over the abdomen and on the back. There was slight diarrhœa with watery stools. The case ran the usual course for the following two weeks, presenting no peculiar features. The temperature always ranged below $102\frac{3}{5}$° F., and pulse 96. The diarrhœa ceased under treatment. On October 8th the evening temperature reached 99° F. Next day there was a slight chill with rise of temperature to 103° F. and pulse to 112. From this to the termination of the disease the temperature was markedly remittent (between 99° and $103\frac{3}{5}$° F.) On the 16th of October the patient became delirious and remained so till death on the 25th. During this period he passed fæces involuntarily and had retention of urine, requiring catheterization. He died comatose on the evening of 25th of October. No murmurs were detected over the heart area till four days before death, when a soft systolic murmur was detected and was best heard at bottom of sternum. The urine contained a small amount of albumen and a few pus corpuscles.

The necropsy, held twelve hours after death, presented the following general features: Typical typhoid ulcers of the small intestine in various stages; the mucous membrane of the ileum over a space of two by one and a half inches, just above the ileo-cæcal valve, was dark and commencing to slough; there were infective vegetations on the tricuspid and mitral valves; a few scattered pyæmic infarcts in the lung; numerous pyæmic infarcts in spleen, and many miliary abscesses in both kidneys.

In Detail.—The body was much emaciated and of a distinctly sallow hue. Rigor mortis had begun in the upper extremities. No other points of interest were found on external examination. Permission was obtained to examine the heart and abdomen only.

Abdomen flat; no fluid in peritoneal cavity. Stomach and intestines moderately distended. Blood vessels of the great omentum and of mesentery injected; those of the mesentery of lower eighteen inches of the ileum were markedly congested. On examination of these vessels no signs of thrombosis were present in arteries or veins.

Nothing abnormal in large bowel. Appendix normal. In the small intestine there were found numerous ulcerated patches in the lower part of the bowel. These patches corresponded to the situation of Peyer's glands. The ulcers were generally circular or oval in outline, and as a rule reached through to the muscularis. Most of the ulcers in this situation were freely suppurating. The last two or three inches of the mucous membrane of the ileum was very dark and in places could readily be pulled away from the sub-mucosa. Higher up the bowel were scattered ulcers, usually single, and ranging from ¾ to ¼ inch in diameter. The remaining solitary follicles were enlarged nearly to the duodenum. Many of the ulcers higher up in the bowel had commenced to cicatrize.

The *stomach* and *duodenum* presented nothing abnormal.

The *liver* weighed 62 ounces, was pale and rather soft, and was in a condition of cloudy swelling. The portal vein was filled with dark fluid blood.

Cultures were made on agar-agar jelly from the liver pulp, and colonies of staphylococcus pyogenes aureus developed freely, along with a few colonies of a bacillus which from its morphological and cultural characters I considered a variety of the B. coli communis.

Gall-bladder empty. Bile ducts patent.

The *spleen* weighed 7¾ ounces, was closely adherent to the surrounding peritoneum, was dark in colour, pulp soft, almost diffluent. On the surface of the organ were from twelve to fifteen infarcts ranging in size from a walnut to a pea. Some were broken down into a purulent debris, and were surrounded by a marked inflammatory zone; others were more recent. Cultures on agar-agar made from the spleen pulp grew numerous colonies of staphylococcus pyogenes aureus and three colonies of undoubted bacillus typhosus. Cultures from the infarcts gave pure growths of the staphylococcus.

The *mesenteric glands* were enlarged and quite soft, but showed no pus formation. The *suprarenals* and *pancreas* were natural. The kidneys weighed each 4¼ ounces. Their capsules were slightly adherent over numerous scattered, pin-head sized, whitish spots—miliary abscesses—exuding a minute bead of pus on section. No cultures were made from these. The cortex of both kidneys was rather pale and slightly swollen (cloudy swelling), the medulla dark red. The renal pelves, ureters and bladder were normal.

The thorax was examined through the diaphragm. The pleural cavities contained no fluid. Here and there on the surface were flakes of recent lymph covering infarcted lung. The lungs presented about six or eight walnut-sized pyæmic infarcts. Two or three of these infarcts were completely broken down into a purulent debris, otherwise the lungs were normal. The right lung weighed 19 ounces, the left 17½ ounces. The pericardium contained only a trace of serous fluid.

The heart weighed 8¼ ounces. Right heart flaccid, the left contracted. Muscle, pale, soft and flabby. Right auricle contained soft post-mortem clot.

Tricuspid valve was markedly diseased. One cusp was destroyed by an ulcerative process, leaving only the ragged attached edge, presenting at one spot a rough pea-sized vegetation which crumbled under the finger; a second cusp presented a bean-sized vegetation, and the edge of the valve was slightly eroded. The other cusp was normal.

The right ventricle and pulmonary artery were normal. Left auricle normal.

Mitral valve.—The aortic cusp presented several small pea-sized vegetations and was slightly eroded at one point.

The left ventricle, aortic valve and aorta were normal.

A culture from the clot in the right auricle remained sterile. A microscopical preparation of one of the vegetations showed numerous micrococci masses.

Although this post-mortem examination was not a complete one, yet I think one could have no hesitation in stating that the source of infection was from the ulceration in the bowels. Further, the infective vegetations and the arterial pyæmia were due undoubtedly to infection by the common staphylococcus pyogenes aureus, in all probability via the portal system.

The bacillus typhosus is capable itself of exciting infective vegetations on the valves, but this case follows in causation the type of the vast majority of cases of infective endocarditis in being due to the staphylococcus aureus.

The question might readily arise in such cases: Would not early treatment by intestinal antiseptics have greatly lessened the tendency to infection and perhaps have been the means of preventing the fatal infection? I would say, in all probability such treatment would have such a tendency, but pyæmia as a cause of death in typhoid fever is too uncommon to make a routine treatment by intestinal antiseptics a necessity on this account.

UPON A CASE OF FOAMING LIVER (SCHAUMLEBER) WITH THE DEVELOPMENT OF GASEOUS BULLÆ IN VARIOUS ORGANS, DUE TO THE PRESENCE OF THE BACILLUS AEROGENES CAPSULATUS.[1]

BY

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While I have to confess that I have nothing new to add with regard to this interesting form, the bacillus aerogenes capsulatus, about which Professor Welch and Dr. Flexner are issuing a full study in the new *Journal of Experimental Medicine,* and while I have to confess further that I have been so much occupied with other work that I have not been able to make a full study of the case, nevertheless, inasmuch as I believe I am recording the first in which this form of anœrobic microbe has been recognised in Canada, I may possibly obtain forgiveness if I publish a brief note upon the case.

A. C., aged 45, a strongly built lumberman, had for the past five or six years suffered from dull aching pains in the loins. He was a temperate man and had no other complaint.

While drawing wood four weeks previous to admission he felt a soreness over the whole body, but continued at work. Upon the following day, the soreness gave place to actual pain, localised in the abdomen and loins. The pain was so severe that at noon he ceased work and took to his bed. The pain became at times agonizing, but never became localised to any spot in the abdomen. He suffered from recurrent chills, his urine became very red (? bilirubin) and a week before entering he became jaundiced. Upon April 9th he was admitted to the Royal Victoria Hospital, under Dr. Bell, to whose house surgeon, Dr. Anderson, I am indebted for these notes.

Upon admission the patient complained of no pain, but only of extreme weakness. Despite the fact that he had been ill for four weeks, he still preserved a well nourished and muscular appearance. There was the anxious abdominal facies, with moist perspiring icteric skin. The temperature was 102°, the pulse 120, the respiration 28.

The abdomen was pendulous, and there was tenderness over the whole, particularly over a small area, 3 inches to the left and 5 inches above the umbilicus, where percussion was dull and an indistinct mass could be felt. There was some tenderness also in the left groin. The urine contained albumen and bilirubin, the fæces were liquid and dark, containing blood and pus cells.

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[1] Read before the Montreal Medico-Chirurgical Society, April 17, 1896.

Shortly after admission the patient vomited coffee ground vomit, and continued to vomit thus until his death, 5 days later. The patient continued so weak that it appeared hopeless to attempt any operative interference. Upon the 14th he was coughing constantly, and was in great pain. The pulse was weak and rapid. The abdomen was distinctly enlarged and tympanitic, and the enlargement appeared to be progressive. The tympany extended for about 1½ inches above the edge of the liver, which could at this time be distinctly palpated. The blood upon the 14th exhibited great leucocytosis, the red corpuscles did not form into rouleaux and there was marked poikilocytosis. On the 15th the patient died.

The body was placed in the cold chamber, and the necropsy performed 28 hours after death. The necropsy revealed that there had been a perforative appendicitis. Below the cæcum in the pelvis, between it and the rectum, was an abscess of the size of a large tangerine orange. Into this abscess passed the appendix, which had ruptured at the junction of the 1st and 2nd fourths. The gangrenous distal portion of the appendix lay in the abscess cavity. The abscess was sharply defined. The mesentery of the small intestine was very thick and fat, and upon cutting through it in removing the intestines occasional small foci of pus were cut across. Upon further examination these foci were found to be linear, and the pus to be in and around the branches of the superior mesenteric vein. Deeper down in the mesentery was an extensive sloughing abscess cavity, its branching corresponding to the mesenteric vein. The superior mesenteric appeared to open into this abscess cavity, its terminal and upper portion alone being clearly recognisable. The abscess cavity extended up to the head of the pancreas and the duodenum, and in the third part of the latter was a fine perforation leading into the abscess cavity.

Evidently, therefore, we had here to deal in the first case with a case of appendicitis, which possibly taking into account the history of long continued soreness and pains in the lower abdomen, may have been of the recurrent type. Eventually there had been perforation and localised suppurative peritonitis and abscess formation, with suppurative thrombosis of the branches of the superior mesenteric vein, and this thrombosis had grown along other branches of the vein, and had led eventually to a condition of retroperitoneal abscess.

But there had been further changes. Bubbles of air or gas were noticed in the veins of sundry of the abdominal viscera. Unfortunately there exists no note as to whether also the presence of air was noticed in the coronary veins. My impression is that I distinctly noticed this condition, but in the absence of any definite note I can affirm nothing surely. When, however, the liver was removed it was found to float high out of the water, and the same was noticed with regard to the kidneys and to a somewhat less extent, in connection with the spleen. It should also be added that the abdomen was found greatly swollen, even more so that it had been at the time of death, and upon opening it there was an abundant exit of gas. The liver was not much above the normal size, and presented rounded edges. Its surface was smooth with a dark slaty background, mottled over thickly with pale yellowish circular patches, 2 to 5 mm, across. On section it was extremely emphysæmatous, and crackled on pressure, and when a lighted match was brought close to the cut surface and pressure was exerted upon the organ, the expelled gas caused a series of minute explosions. The cut surface had a reddish-brown colour on the whole, but varied from bright red to even a greenish tinge. It exhibited numerous small whitish areas of necrosis, with softened centres, and also numerous sharply defined bullæ (where the gas had been); these averaged 3 to 5 mm. across. It was noted that although the mesenteric exhibited so extreme a condition of suppurative thrombosis, no thrombi were to be seen in the large vessels of the liver.

The spleen was large, soft and almost diffluent. It had a slightly emphysæmatous feel, but presented no clearly marked bullæ. The kidney also showed no large bullæ although it floated so easily; there were, however, numerous whitish areas of necrosis or abscess formation level with the surface, and resembling those seen on the surface of and in the liver. On section, the cortex was plainly swollen, with similar areas both in the cortex and in the medulla. Bacteriologically the surface growths gave in the main, colonies of a minute diplococcus. A deep agar lactose tube showed in 24 hours a slight growth along the needle track away from the surface. In 48 hours, the deep growth was more distinct and one bubble of gas was well developed. In 72 hours there was abundant development of gas bubbles, but now in the upper part of the needle track there was a development of the same minute diplococci which had been seen in the previous cultures. Preparations made by breaking the tube and taking material only from the lower portion of the growth gave large bacilli corresponding in every respect with those described by Welch as the B. aerogenes capsulatus.

Sections of the liver and other organs showed large colonies of this same large bacillus corresponding to the areas of necrosis recognised by the naked eye ; but there was very faint evidence of the presence of the capsule, even when preparations were made by Welch's method of demonstrating the capsules. At most where the bacilli were crowded together, a faint delicate halo could be seen surrounding each individual. Welch and Flexner have, however, called attention to the fact that the capsule is not constantly recognisable.

That the bacillus in this case had commenced to grow in the tissues ante-mortem is shown in the first place by the development of tympanites on the day preceding death. In the second, I take it, by the localised growths in the liver and kidney, these growths corresponding to the localised necroses in these organs. At the same time it is clear that in this as, if I mistake not, in all cases, the presence of this gas-producing germ was of the nature of a secondary infection, and indeed I am inclined to doubt whether under ordinary conditions the bacillus can grow in the human organism without the simultaneous presence of aerobic microbes. This, perhaps, would seem to be contrary to the experience gained by inoculating pure cultures of the germ into the lower animals ; yet it must be remembered that the conditions of such inoculations, the number of microbes and also the amount of products of growth injected form, taken together, a very different process to that which must occur in natural infection.

A CASE
OF
INFECTION BY THE BACILLUS AËROGENES CAPSULATUS.[1]

BY

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It is just a few weeks ago since Professor Adami presented before this Society the liver removed from the body of a man who died at the Royal Victoria Hospital from a general infection, following on an attack of appendicitis, the bacillus aërogenes capsulatus having been found post-mortem in the various organs. This, I believe, is the first case of the kind recorded in Canada. Scarcely a fortnight later, at an autopsy on a case of pyelonephroses at the Montreal General Hospital, an almost identical condition of the organs to that described by Dr. Adami was found.

I was enabled at the time to make anaërobic cultures from the various organs, but succeeded in obtaining a growth from the liver blood only. Inasmuch as the bacilli have never yet been exhibited before the Society, I thought it would be of interest to show them here to-night and to describe briefly the conditions under which the organism was found.

The history of the case (for which I am indebted to Drs. Finley and Cowie) is briefly as follows : A. L., a French Canadian, aged 23 years, was admitted to the wards of the Montreal General Hospital April 22nd, 1896, having ten days previously injured his side by falling over a wash-tub and immediately losing consciousness ; later vomiting supervened and persisted intermittently for some days. Two days before admission swelling was observed in the left side and on the same date he had a severe chill.

The *condition on entering* showed the patient to be a well-nourished muscular man with a moderate degree of anæmia ; he complained of no pain. Pulse 84, respiration 24, and temperature 98$\frac{4}{5}$°.

Physical examination showed the lower thoracic and upper abdominal regions on left side to be large and somewhat bulging, this bulging extending across to the nipple line on the right side and downward on the left to the level of the umbilicus.

Palpation revealed a firm, smooth mass extending beneath the ribs on the left side, backwards to the left loin and downwards to about 3 inches below the umbilicus, passing beneath the ribs on the right side about 1 inch inside the nipple. This mass had an indistinct rounded edge directed downward and to the right. There was no pulsation but distinct fluctuation. Auscultation revealed no bruit. The percussion note was dull over the area described, this dulness extending up into the left middle axilla. The mass was aspirated April 23rd, and a few minims of a chocolate coloured fluid withdrawn, which on microscopic examination was found to consist chiefly of blood cells. The diagnosis of hæmatoma with probably some pre-existing kidney disease, was made.

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[1] Read before the Montreal Medico-Chirurgical Society, June 12, 1896.

The urine contained blood till May 3rd, when it became clear with a trace of albumen. On this date the patient had a chill and his temperature rose to 101$\frac{2}{5}$°, pulse 130, and respiration 36. On the following day he complained of pain in the back on the left side, extending round to the front and across the abdomen to the right side. Vomiting set in and the tumour, which had diminished considerably in size, now became again enlarged and tympanitic.

On May 6th the patient's condition was very grave, and it was decided that an operation held out the only chance. He was, therefore, sent to the operating theatre, placed under ether, and an incision made in the left lumbar region, evacuating an immense cavity of gas and fluid of a dark red colour, and of very putrid odour. Manual examination revealed a large cavity with rough, shaggy walls. Unfortunately the patient succumbed before the completion of the operation.

The autopsy was performed by Dr. Johnston and myself 24 hours after death, and the following notes have been abstracted from the report :

Body fairly well nourished ; sub-icteroid tint of skin ; above right Poupart's ligament is an oblique scar ; abdomen slightly distended and tympanitic ; whitish froth about nostrils. On the left flank a recent sutured incision ; on opening this a brownish-bloody pulp exudes, which microscopically is found to consist of red and white blood cells and some granule cells.

Abdomen.—Old amputation of appendix ; chronic adhesive peritonitis with slaty pigmentation. The left kidney converted into a large sac, the size of a head, filled with gas and grumous, fœtid and bloody contents. Colon stretches in front of this but is not in any way involved. Sac extends somewhat to right of the middle line. Spleen in about normal position. Subsequent examination of the sac shows it to be over one foot in vertical diameter, the inner surface rough, greyish and shreddy, and in places greenish, with areas of necrosis. The wall presents at intervals rounded orifices communicating with diverticula from the main sac, evidently altered and dilated calyces. Thickness of wall averages ¼ inch, and at lower extremity kidney structure is recognized. Kidney in a condition of putrid pyelonephrosis and perinephritis. At upper extremity, embedded in connective tissue, is the left supra-renal, which is firm, but showing no new growth and is easily detached from the sac. The left renal artery is adherent to the wall of the sac. Left ureter obliterated and shows fibroid infiltration, and below the sac is an irregular space with greyish necrotic and very fœtid walls.

Right Kidney much enlarged, pelvis dilated, roughened and reddened; ureter dilated as far as the bladder; evidences of acute parenchymatous nephritis.

Spleen enlarged, foaming and with acute cloudy swelling.

Liver.—On surface numerous greyish brown circular areas the size of pin points; these are sharply defined and the centres in many appear to contain a minute gas bubble; these rapidly increase in number and size when exposed to the air. On squeezing, a brownish frothy blood abundantly exudes. (Liver floated in preserving fluid, and after a few hours was much distended, with abundant froth about it.)

Gall Bladder—Contains about ʒi frothy bile. Frothing in splenic, portal and other veins examined.

Heart—Contains a little froth mixed with blood clots, healthy except for slight thickening of valves. Both lungs filled up pleural cavity and seemed more voluminous than normal.

Anatomical Diagnosis—Old amputation of appendix; chronic adhesive peritonitis with slaty pigmentation; left pyelonephrosis and perinephritis with obliteration of left ureter; right hydronephrosis and acute parenchymatous nephritis; submucous emphysema of the stomach; foaming and acute cloudy swelling of spleen; foaming liver (" Schaumleber"); frothing bile; calcification of mesenteric glands.

Microscopical Examination of liver blood showed on cover slips in each field from 1 to 5 large bacilli 3 to 5♏ in length, mostly with square ends, a few with rounded; occurring for the most part in pairs and surrounded by a clear space. These were the only bacilli present.

A guinea pig inoculated intraperitoneally with 1 cc. of liver blood died in about 36 hours, with rapid formation of gas after death. the body at the end of 24 hours being blown up to nearly twice its original size. Examination revealed an emphysematous condition of the tissues and organs, and gas was demonstrated in the blood vessels.

On microscopic examination bacilli resembling those found in the liver blood were seen, though not in pure culture, due probably to the entrance of other bacteria after death.

From anaërobic cultures taken from the human body on 2 per cent. glucose agar I succeeded in obtaining a growth from the liver blood after 36 hours with formation of gas. The colonies were more numerous towards the bottom of the medium, and appeared as rounded and oval whitish, flattened masses, varying from a pin head, to a little more than 2 mm. in diameter ; opaque in the centre with irregular outline, while in their immediate vicinity were bubbles of gas. No growth on the surface nor for 2 to 3 mm. beneath it. On microscopic examination, bacilli in pure culture, answering to the description of the bacillus aërogenes capsulatus, were seen. I was unable to obtain subsequent cultures, but there can be little doubt as to the identity of the bacillus. A slide showing the bacillus is placed under the microscope, and attention must be drawn to the fact that Welch and Nuttall, who discovered and isolated the bacillus in 1892, have pointed out that the name bacillus aërogenes capsulatus appears at times to be a misnomer, inasmuch as the capsule does not seem to be always constant. However in this specimen stained by Welch's method, the capsules can be made out in a considerable number.

In view of the very full account of this bacillus given in the Johns Hopkins Hospital Bulletin, July-August, No. 24, 1892, it is needless for me to more than mention some of the chief points about its microscopic appearance. It is non-motile, varies somewhat in size, but its average length is from 3 to 6 mkm., thickness a little greater than the anthrax bacillus. Uusual forms are straight, but slightly curved or bent forms are seen ; end rounded or square, or nearly so where the ends are adjacent. They occur singly in clumps or short chains, but have no tendency to form long chains, this being a distinguishing point between them and the anthrax bacilli. They stain with the ordinary aniline dyes and also by Gram's method. Capsules may often be demonstrated around the bacilli, varying from one-half to twice the width of the bacillus. They grow on ordinary media in the absence of oxygen. An interesting clinical feature in this case is the strong probability of their presence in the body during life, as was evidenced by the previously dull tumour becoming tympanitic, and the escape of gas on making the incision into it on the operating table.

Since presenting the above report to the Medico-Chirurgical Society our attention has been called to a case admitted under Dr. Hutchison, where a man sustained a compound fracture of both bones of the forearm.

The arm was dressed as usual in splints, and on the following day so great was the swelling that the bandages had to be removed.

During the next twenty-four hours the swelling still increased and marked emphysema ensued, the temperature rapidly rose to 106°, and the emphysema extended up as far as the scapula.

Operation was refused and the patient left the hospital and died on the following day, all the customary symptoms of septicæmia having developed,

It is more than likely that this case was but another example of a septicæmia following infection by the bacillus aërogenes capsulatus, and this short note is added without further comment than to suggest the possibility of a general septicæmia arising in this way from an external wound.

RETROSPECT
OF
CURRENT LITERATURE.

Medicine.

Relapse in Scarlatina.

GRIFFTH. "On relapse in scarlatina."—*Quarterly Medical Journal,* October, 1895.

COMBY. "De la scarlatine à rechute."—*Semaine Méd.*, 1896, No. 30.

The question of relapse in infectious fevers, although universally admitted in typhoid, has not been the subject of much attention in scarlatina. Griffith found, in 2,000 cases admitted for scarlatina to the Bagthorpe Fever Hospital, that 14 suffered from second attacks whilst actually under observation. In these cases, the second attack was marked by a rash, lasting from one to four days, sore throat and fever.

Comby relates briefly two cases of relapse in children of four and six years. In the first case a scarlatinal rash appeared during the period of desquamation; in the second, on the fourteenth day of a normal case, fever and rash appeared.

In estimating the frequency of relapse several sources of error are present.

An erythematous rash is common in such complications as nephritis or tonsilitis. Rendu interprets the rash as a streptococcus manifestation, and states that a pultaceous angina is always present, proving a source of secondary infection. Such erythemas, however, pass off rapidly, and may be excluded in the cases observed by Griffith.

The question as to whether the second attack is an auto-infection or due to a second infection from neighbouring cases is referred to by Griffith. If the latter supposition is correct, it would be an argument against placing large numbers of cases in a ward. Griffith's supposition that a mild case of scarlatina may contract a second attack from contact with a virulent type of the disease hardly seems to be warranted, and it would seem an unnecessary refinement to classify different types of the disease in different wards as suggested by this writer.

Arsenical Paralysis.

COMBY. "Arsenical Paralysis,"—*La Sem. Méd.*, 1896, 33.

So many cases of arsenical paralysis have been reported in the last few years that its symptomatology is well established. Paralysis resulting from peripheral neuritis has now been repeatedly observed from the medicinal use of the drug, and occasionally following the ingestion of a single large dose, provided the patient recover from the immediate gastro-intestinal symptoms. Accidental poisoning by contaminated wall papers has also produced paralysis.

In addition to neuritis the large cells of the anterior cornua have been found atrophied in both man and lower animals.

The interest of Comby's case lies in the fact that there was incontinence of urine and fæces in addition to paraplegia and abolition of the reflexes. Incontinence is certainly very unusual in cases of this kind, and points strongly, as pointed out by M. Rendu in the discussion of the case, to a co-existing affection of the cord. In its symptoms arsenical paralysis bears a much closer resemblance to alcoholic than to lead neuritis. Affecting chiefly the lower extremities, involving the sensory as well as the motor fibres and frequently causing ataxia or so-called pseudo-tabes, these affections can only be distinguished by the history of the case and by a chemical examination of the urine for arsenic. Considering the great frequency with which arsenic is given to choreic children in large doses, arsenical neuritis is fortunately a rare disease, and the administration of the drug is seldom accompanied by any further discomfort than temporary gastric derangement.

Tabes and Syphilis.

STORBECK. "Tabes and syphilis."—*Zeits. f. Klin. Med.*, XXIX., 12.

Storbeck has re-opened the question of the etiology of tabes and its relationship to syphilis. Statistics on this point still present great variations. Gowers considers that syphilis precedes the disease in 70 or 80 per cent. of cases in the lower classes. He further states that syphilis may be excluded with confidence in perhaps 10 per cent.

Fournier regards 93 per cent. of tabetics as subjects of syphilis whilst Westphal places the number at 33 per cent.

Storbeck has studied the question carefully in 108 tabetics. Of these 22 had certainly had syphilis ; in 63 syphilis could be excluded and in 23 the question was doubtful. Admitting that half of the last named were syphilitic, a ratio of 30.5 per cent. would represent the proportion of tabetics who had suffered from syphilis. Storbeck thinks this number is not higher than might be expected from the frequency of syphilis and therefore regards the relationship between these diseases as unproved.

It is obvious that it is often impossible to prove an old attack of syphilis, owing to defective memory or wilful deception on the part of the patient. It is only in cases where a clear history or undoubted stigmata of the disease persists that a positive opinion can be expressed. In all statistics of this nature considerable latitude must be allowed in the personal equation of the observer.

F. G. Finley

Surgery.

The Treatment of Loss of Nerve Substance in Peripheral Nerves.

G. Carl Huber. "A study of the operative treatment for loss of nerve substance in peripheral nerves."—*Journal of Morphology*, Vol. XI., No. 3.

The importance of restoring the physiological functions of peripheral nerves, which have been subjected to loss of continuity, and the frequency of injuries which cause this condition, have led the author of the above paper to carry out an extensive series of investigations as to the best methods available to this end. The various operations employed in the treatment of nerve injuries of this nature are briefly as follows:

(*a*) Nerve stretching. This method, advocated by Schüller, does not mean that the nerve itself should be actually stretched, but that it may be drawn out from the loose connective tissue surrounding it, and the limb being placed in proper position, the separated ends can then be united. This has been done even when a distance of 4 or 5 cm. separated the divided ends.

(*b*) Implantation of a nerve segment removed from a recently amputated limb or from one of the lower animals.

(*c*) Tubular sutures; these consist in inserting the two ends of the divided nerve into a decalcified bone tube.

(*d*) Union of ends with catgut threads, or a bundle of catgut threads (*suture à distance,* Assaky). By the use of catgut threads it is believed that it is easier for the down-growing central fibres to reach the peripheral end.

(*e*) Nerve flap from the central stump, or a flap from both peripheral and central stumps.

(*f*) Grafting of the central end of the peripheral stump of a divided nerve to an accompanying nerve trunk.

(*g*) Cross suturing the long central and peripheral stumps, in cases where two accompanying nerves are cut obliquely, and grafting the central short stump to the central long one, and the peripheral short stump to the peripheral long one.

(*h*) Resecting the bone or bones in the extremity and suturing the nerve.

The author, in his experiments, employed the method of implantation, tubular suture, the use of a bundle of catgut threads, the flap operation, grafting injured nerve into accompanying sound nerve, and finally cross suturing and grafting. The animals used were dogs. As a rule the ulnar nerve was selected for operation; in a few cases the median or sciatic was used. When a nerve was implanted it was usually taken from the sciatic of a cat. The author, in his investigations, experimented upon fifty of these animals, and the operations were conducted as aseptically as possible. The wound was closed, as a rule, with a double set of sutures, the deeper ones embracing the connective tissue overlying the nerve, the other the skin and muscles. By this method any exposure of the nerve operated upon was prevented, not even did the skin wound subsequently open from any cause.

From the experimental work of other workers, as well as of the author, the following conclusions may be drawn:

1. That it is possible to restore the functional activity to the peripheral part of a divided nerve with loss of nerve substance if the resected ends are united with a segment taken from some other nerve trunk, with catgut threads or with a bone drain.

2. Implantation of a nerve segment, the two ends of which have been sutured with one or several catgut sutures to the resected ends of the injured nerve, gives the most favourable result.

3. The regeneration of the peripheral end is the result of an outgrowth of new axis cylinders from the central stump, which eventually reaches the peripheral part of the resected nerve wherein their growth continues.

4. Implanted substances, whether they be catgut threads, bone drain or an implanted nerve segment (which soon degenerates, the collapsed sheaths remaining), are to be regarded merely as guides to the down growing axis cylinders.

5. The fact that the new nerve fibres have a much straighter course and more regular arrangement following upon the implantation of a nerve segment than after the use of catgut threads or a bone drain, shows that the degenerated fibres of an implanted nerve segment offer much more favourable mechanical conditions for the down-growing axis cylinders.

6. The above methods may be used immediately after the injury to the nerve, or at a later period. In the latter case the return of function takes place more slowly.

7. The operation of making a nerve flap is not to be recommended, as the flap from the central end usually degenerates, nor does it supply so favourable a union as when a segment is carefully inserted.

8. In cross suturing the long ends of two divided nerves and engrafting the short ends to the accompanying long stumps, regeneration of but one of the peripheral segments (the long one) of the two injured nerves can be hoped for; the other peripheral segment remains degenerated; hence implantation of a nerve segment would be preferable in dealing with the latter. *E. J. Semple.*

Pharmacology and Therapeutics.

The Etiology and Treatment of Exophthalmic Goitre.

PUTNAM, JAMES J. "Modern views of the nature and treatment of exophthalmic goitre."—*Boston Medical and Surgical Journal*, Vol. CXXXIII., No. 6.

KINNICUTT, F. "The theory of the thyroid origin of Graves' disease, with its bearing on the surgical treatment of the disease."—*New York Medical Record*, April 18, 1896.

STARR, M. ALLEN. "On the nature and treatment of exophthalmic goitre, with special reference to the thyroid theory of the disease and to the treatment by thyroidectomy."—*The Medical News* April 18. 1896.

BALDWIN, W. W. "Some cases of Graves' disease, succeeded by thyroid atrophy."—*The Lancet*, January 19, 1895.

OWEN, DAVID. "Further notes on the treatment of a case of exophthalmic goitre."—*The British Medical Journal*, Feb. 16, 1895.

MAUDE, ARTHUR. "Notes on the treatment of Graves' disease by thymus gland."—*The Lancet*, July 18, 1896.

One of the most interesting stories in connection with recent progress in medical knowledge is the gradual clearing up of the misty views previously held in connection with the etiology of exophthalmic goitre and with it the steadying of the therapeutic indications for its treatment.

The frequency with which this affection was met with, its peculiar grouping of symptoms, its obscure relationship to many other diseases of the nervous system, and its resistance to ordinary methods of treatment, have made it a fascinating object of speculation and research to both physician and pathologist. Many theories have been offered and temporarily accepted as its explanation, but one by one have they been discarded as each in turn has been found to fail in explaining all the symptoms. The theory of cardiac disease, organic or functional, was the first to be rejected and was supplanted by one, ascribing the symptoms to changes in the cervical lymphatic glands. Pathologists, however, failed to find sufficient evidence to support either this supposition, or that referring the symptoms to a lesion of the vasomotor centre in the medulla.

Mobius, of Leipsic in 1886, first suggested that the symptoms were due to a toxæmia, the result of hyperactivity of the thyroid gland. This opinion has gradually gained ground, especially since Greenfield, in the Bradshaw lectures of 1893, showed that well defined structural lesions, evidently a true hypertrophy of the glandular elements, and indicating an exaggerated, and probably perverted function are met with in this gland in severe cases of exophthalmic goitre. These observations have been confirmed by many pathologists both in England and on the Continent.

Evidencing the truth of this theory is the striking contrast exhibited between the symptoms in Graves' disease and in myxœdema, which latter is now generally regarded as due to a defective functional activity in the thyroid. This antithesis of clinical phenomena is stated by Kinnicutt as follows : " In Graves' disease enlargement of the thyroid gland is present, in myxœdema an atrophy of the gland. In the one case the skin is fine, soft, moist, and warm ; in the other coarse, hard, dry with a tendency to desquamate, and cold ; in the one perspirations, often profuse in character and easily excited, are conspicuously present ; in the other their absence even in the warmest weather is equally noticeable. In Graves' disease the temperature is never subnormal and pyrexia of greater or less degree occurs on slight causes ; in myxœdema the reverse holds good. In the former an excitable, mobile pulse, tachycardia, and palpitation prevail : in the latter a sluggish heart action and slow pulse. In Graves' disease irritability and excitability, in myxœdema apathy and dulness of apprehension and perception attract the attention. In the former tremor is one of the cardinal symptoms, in the latter it is absent, except in its rare occurrence in the form of tetany. In Graves' disease the nutrition of the hair, nails, and skin is, as a rule, well maintained ; in myxœdema the reverse obtains." In exophthalmic goitre the eyes are abnormally widely open, and generally von Graefe's and Stellwag's symptoms are present, while in myxœdema there is a marked tendency to heaviness of the eyelids, so that the upper lid falls, and there is distinct narrowing of the palpebral fissure. Furthermore the large number of cases of Graves' disease occur between the ages of twenty and thirty, during the period of the greatest activity of the generative functions. The interval between forty and forty-five, the period of decline of these functions, furnishes the most numerous instances of myxœdema.

Again, the development of myxœdema in some instances, subsequent to recovery from typical Graves' disease is another argument in favour of this theory. With alterations in the parenchyma, an over-growth of interstitial tissue, Dr. Greenfield states, is developed which gradually invades the glandular structure, and more or less interferes with its function. Cases of this kind have been reported by several observers, among others by Gowers and Ord. Dr. Baldwin in his paper reports four such cases.

And lastly, both Starr and Kinnicutt draw attention to the similarity between the symptoms of exophthalmic goitre, and those produced by an excessive dose of thyroid extract. These may be stated to be: (1) a rise of temperature above normal; (2) increased rapidity of the pulse, and palpitation; (3) a burning sensation with some flushing of the skin, which may become moist; (4) rapid emaciation: (5) a condition of mental excitement; (6) exophthalmus. If the dose be still further pushed insomnia, polyuria, diarrhœa, and fine tremor may develop.

These arguments appear almost unanswerable. Kinnicutt points out, however, that although in many cases the pathological conditions found represent a true hyperplasia of the gland, in some cases, changes attended by a considerable loss of secretory tissue have been associated with the symptoms of exophthalmic goitre. Such cases undoubtedly militate against the thyroidal theory of Graves' disease in so far as hypersecretion alone is regarded as the causative agent, but not if a perverted function, with qualitative changes in the secretion is accepted in explanation. In addition to these actual pathological conditions, it would appear necessary for the full development of the symptom complex of this affection that we shall have in addition an inherited or acquired neuropathic tendency. The spontaneous and rapid disappearance of the symptoms in occasional cases, and complete recovery under treatment in others, indicate that extensive structural changes are not always present, and it would appear that sometimes peripheral irritations elsewhere in the body are sufficient to maintain functional activity of the gland which ceases on the removal of the irritation.

If the conclusion above reached is valid, that exophthalmic goitre is due to an excessive or perverted secretion of the thyroid gland, associated with an irritable or neurasthenic condition of the nerve centre, that treatment will prove most successful which in one way or another effects a diminution in the activity of the thyroid.

Starr thinks it not improbable that the good results following treatment with belladonna, pushed to its physiological limit, are due to a specific action of the drug, arresting the secretion of the gland.

The rest cure is probably one of the most successful methods employed in the treatment of Graves' disease, and associated with the use of iron and tonics acts probably by quieting general nervous irritability. The mental condition has a very marked influence upon the symptoms of this disease. From every-day experience we recognize the distinct action which the mind has upon the various glands of the body. The secretion of tears is almost entirely produced by mental impressions; the secretion of saliva is markedly stimulated by sensory impressions; the secretion of gastric juice and the whole process of digestion are decidedly affected by mental conditions. It is probable, therefore, that the secretion of the thyroid gland is affected by mental conditions; and there is an overwhelming amount of testimony to the effect that the onset of exophthalmic goitre can be traced to mental conditions, especially of the nature of fright, dread, and anxiety. It is impossible, therefore, to ignore the mental relation between a restful state of the mind without anxiety and a diminution or more natural secretion in the glands of the body, and it seems probable that the success of the rest cure in these cases is due to the little understood but powerful effects of the mental state upon bodily functions.

Electricity is an agent which has had a high repute in the treatment of this affection. Allen Starr says of it, "Inasmuch as various methods of its application have met with success in certain hands, and the same methods have utterly failed with others, it is difficult to determine its real value as a therapeutic agent. It is possible that it may act through the mind by suggestion. It is also possible that it may have a distinct influence upon the secretions of the gland."

Rockwell has obtained the greatest success by the use of very strong galvanic currents (60 mille-ampères), applied through a clay electrode directly to the gland, and such a current would undoubtedly result in chemical changes within the gland, modifying its secretion. Dr. Putnam, of Boston, favours strong faradic currents, causing contraction of the muscles of the neck and compression of the gland.

The testimony in favour of the action of aconite and veratrum viride in the treatment of exophthalmic goitre is too definite to be ignored. It may be attributed possibly to their depressant influence upon the heart, in this way reducing materially the flow of blood through the gland. Ergot also by contracting the medium-sized arteries may exert its beneficial action in the same way.

A remedy which Dr. Starr thinks has been of much service is glycero-phosphate of sodium in 20-grain doses three or four times a day. This drug was first employed by Trachewsky in Kocher's clinic, and was found to have the effect of diminishing the size of enlarged thyroid glands.

Very recently attempts have been made in a purely experimental way to treat patients suffering from exophthalmic goitre by means of the administration of thyroid extract. The consensus of opinion, however, seems to be that not only is this treatment of no service, but that it is actually harmful. In one unfortunate case a fatal result appears to have shortly followed the use of the thyroid. If the above theory of the disease is correct there is every reason why the administration of thyroid in this affection should be avoided, and Dr. Starr is of the opinion that in the few cases where an improvement has been noted the patients were not suffering from true exophthalmic goitre.

There are, however, several cases recorded which would apparently indicate a favourable influence upon this disease from the administra- of thymus extract. The origin of this treatment is as follows: David Owen, of Manchester, reported a case of exophthalmic goitre as cured by the use of thyroid glands given in bulk. Some months after he published a correction of this statement, having ascertained that owing to ignorance on the part of the butcher his patient had been supplied with thymus glands exclusively. He ascribed the improvement therefore to the thymus. And Dr. Maude very recently reports four cases under which all the symptoms were improved by its use. On the other hand, a case is reported by Dr. Williams in which this treatment, like that with thyroid extract, was of positive harm to the patient. With our imperfect knowledge in regard to the functions of this gland and to its clinical action in this affection, we are not in a position to say anything definite as to its use.

The question of the surgical removal of the gland while appearing at first sight to be the most rational form of treatment, is one which demands careful consideration owing to its high rate of mortality. It is to be remembered that there is in many cases a very decided tendency to recovery either spontaneously or under the influence of treatment. There are numerous cases, however, in which after a longer or shorter period serious symptoms develop, or in which other treatment has proved of so little avail that the question of operation has to be faced. Dr. Starr has collected 190 cases from medical literature in which operative treatment has been undertaken. Of this number 23 cases died immediately after the operation ; 74 are reported as improved ; 3 are reported as unimproved. In regard to the remainder, no final results are reported. The occurrence of sudden death immediately after the operation, or within two or three days of it, is a fact of very serious import. Death after these operations is not owing to haemorrhage, nor to any want of aseptic precautions. In all the cases reported there have been a sudden rise of temperature to 105°, 106° or 107°, a very rapid pulse (180 to 200); extreme nervous excitability and restlessness, with great anxiety and distress; profuse sweating and finally collapse and death from heart failure. Dr Starr thinks that the most reasonable explanation for this series of symptoms, would appear to be an intense poisoning of the entire system by an excessive absorption of thyroid juice taking place suddenly during the operation.

In the 74 cases reported as cured, there was as a rule no marked immediate result, but a steady progressive improvement extending over several months, until finally the cure was reached. The first symptom to improve, according to Dr. Starr, is the tachycardia. In the majority of cases, the pulse has been notably slowed within twenty-four hours of the operation. Afterwards there is a gradual subsidence of the nervous excitability and restlessness and tremor. The exophthalmus persists longer than any other symptom.

Dr. Starr says, in conclusion, that in severe and intractable cases of exophthalmic goitre in which the rest cure and medicinal treatment have failed to relieve, the operation of extirpation of the thyroid must be considered as justifiable, and should be advocated by physicians. It should, however, not be undertaken hastily, nor by surgeons without previous experience in the extirpation of goitres, and it is always to be remembered that a small portion of the gland must be allowed to remain, else the patient will develop symptoms of myxœdema.

A. D Blackader.

Ophthalmology.

Transient Myopia in Diabetes Mellitus.

APPENZELLER. "Vorübergehende Myopie bei Diabetes Mellitus."—*Centralblatt für Augenheilkunde*, May, 1896.

This is the record of a very interesting and typical case. It was a recent case and under careful observation. The refractive variation was seen to run a parallel course with the exacerbations and improvements of the constitutional trouble. Evidently this was caused by an increase in the refractive index of the aqueous tumour and disappeared with the return of the same to the normal.

Few cases of this nature have been mentioned, but yet if looked for they cannot be uncommon.

Hirschberg, of Berlin, is the authority most frequently mentioned in this connection, and he even goes so far as to say that late myopia coming on without cataract between the fortieth and fiftieth year is a certain sign of diabetes.

Ocular Hereditary Syphilis in the Second Generation.

GALEZOWSKI. "De l'hérédité syphilitique oculaire a la deuxieme generation."—*Recueil d'Ophthalmologie*, Janvier, 1896.

After observing several cases of keratitis diffusa and choriodo-retinitis in adults and children, in which neither they nor their parents had suffered from acquired syphilis, Dr. Galezowski was led to make further investigations as to the cause. From these he discovered that the grandparents had had acquired syphilis.

In such cases, which Fournier has termed para-syphilitic, the continued mercurial treatment was invariably followed by either marked improvement or cure.

Sub-conjunctival Injections of Corrosive Sublimate.

BOURGON. *Annal d'oculistique*, CXIV., 1895.

STUELP. *Archiv. für Augenheilkunde*, XXXI., 1895.

SEGGEL. *Klin. Monatsblatter für Augenh.*, XXXIII., 1895.

Bourgon's cases are a strong plea against the use of these injections. He injected it in six cases. Three had opacities of the vitreous, and the result was by no means encouraging, as only one of the three said that he thought he did not see so mistily. The other three did not even show a subjective improvement.

Stuelp, in a series of preparations and studies on eyes, in which sub-conjunctival injections had been made, says that it is impossible to discover a trace of mercury in the interior of the eye. Hence any effect must be simply due to the irritation set up by the injection, and accordingly injections of sodium chloride would exert quite as good an effect as the sublimate.

Seggel has four cases with favourable results to report. One case was a suppurating wound after cataract extraction; one, an infected wound of the cornea and iris; one an orbital cellulitis from infection from periostitis of the metatarsal bones, characterized by sudden exophthalmus and chemosis and lastly, a case of plastic irido choroiditis.

Seggel makes the injection as far from the limbus as possible and uses no fixation forceps. Daily injections only are indicated when suppuration is threatening.

From what we may gather from these reports favourable results, it would seem, may only be expected when suppuration is threatening or already exists, it appears not to be of much use in lesions of the deeper parts of the globe.

The Relation of Tuberculosis of the Eye to Tubercular Disease in Other Organs.

DENIG. *Archiv. f. Augenheilkunde,* Bd. XXXI., 1895.

This interesting article is really a valuable collation of material which Dr. Denig made in order to ascertain the proportion of cases of eye tuberculosis in which evidences of general tuberculosis existed. He was led to do this as the existence of a true local tuberculosis of the eye is denied by many ophthalmologists.

From the examination of four hundred patients he draws the result that true ocular tuberculosis is just as possibly a local disease as tuberculosis of a joint or lung is local, in the sense of a primary affection. This type he distinguishes from the metastatic variety, which latter seldom occurs.

The variety of the disease decides the prognosis. If in the eye it be not of the form known as a granulation growth it is favourable as regards life, for the granuloma tends to metastasis and soon threatens life.

Etiology of Strumous Ophthalmia.

GORDON NORRIE. *Centralbatt f. Praktische Augenheilk.,* Oct., 1895.

Norrie, in 1889, mentions "pediculi capitis" as a frequent cause of strumous ophthalmia, and now again advances it more decidedly as the result of further experience. The form of the ophthalmia may vary, being a blepharitis or a phlyctenular conjunctivitis or keratitis.

Norrie's observations in his hospital clinic in Copenhagen showed that many children having these diseases of the eye were also infested with lice, most frequently the "pediculus capitis." He also found that so soon as these parasites were got rid of the eye trouble rapidly improved.

Herz considered the eye trouble as reflex from the irritation of the scalp; this Norrie denies, as does also Goldzieher, who says the children scratch their heads and get some of the secretion of the louse into their eyes by rubbing them afterwards.

Norrie holds that scratching the head sets up ulceration of the scalp, which becomes infected by streptococci, etc. Through repeated scratching the fingers become covered with bacteria, and these by rubbing the eyes afterwards are introduced into the eye—inoculated into the cornea or lids. What part the irritating secretion of the louse plays is uncertain. *J. W. Stirling*

Canadian Medical Literature.

[The editors will be glad to receive any reprints, monographs, etc., by Canadian writers, on medical or allied subjects (including Canadian work published in other countries) for notice in this department of the JOURNAL. Such reprints should preferably be addressed to Dr. Kenneth Cameron 903 Dorchester street, Montreal.]

PERIODICALS.

APRIL, 1896.

BRITISH MEDICAL JOURNAL (APRIL 11TH.)

Successful cases of trephining for meningeal hæmorrhage ; ligature of the carotid—Francis J. Shepherd, Montreal, p. 905.

THE MEDICAL RECORD (NEW YORK) (MARCH 14TH AND 21ST, APRIL 4TH AND 11TH).

On the relationship between inflammation and sundry forms of fibrosis. (The Middleton-Goldsmith lecture for the year 1896)—J. George Adami, Montreal.

THE CANADIAN PRACTITIONER.

Roentgen skiagraphy—E. E. King, Toronto, p. 241.

Epilepsies of the insane—E. H. Stafford, Toronto, p. 247.

A case of cholecystduodenostomy for lithiasis, with the aid of a Murphy button—F. Winnett, Toronto, p. 258.

THE CANADA LANCET.

Two cases of movable bodies in the knee-joint—George A. Bingham, Toronto, p. 259.

Five years' experience with the cold bath treatment of typhoid fever—William Osler, Baltimore, p. 261.

THE CANADIAN MEDICAL REVIEW.

Notes on an epidemic of herpetic tonsillitis—John R. Hamilton, Port Dover, p. 119.

Foreign bodies in the intestines simulating gall-stones—D. McKenna, Toronto, p. 122.

THE DOMINION MEDICAL MONTHLY AND ONTARIO MEDICAL JOURNAL.

The non-instrumental treatment of the diseases of women—J. D. Albright, Akron, Pa., p. 369.

Hygiene of Canadian railways (concluded)—p. 371.

THE MARITIME MEDICAL NEWS.

Report of cases of diphtheria treated by antitoxin—E. J. Elderkin, Weymouth Bridge, N.S.

Complications of scarlet fever—A. J. Mader.

LA CLINIQUE.

De l'examen des urines, comme aide du pronostic et au diagnostic—Eug. St-Jacques, p. 381.

De l'examen bacteriologique dans la phthisie pulmonaire, la diphterie, et la blennorhagie—Pierre Bedard, p. 396.

Du mal de tête d'habitude, cephalée ou cephalagie—Philippe Ste. Marie, p. 407.

De l'abus du tabac—J. Lamberet, p. 417.

De la syphilis aquise—J. Eug. Provost, p. 424.

L'UNION MÉDICALE DU CANADA.

Etude Médico-Légale. Les aliénés devant la loi (suite)—Georges Villeneuve, Montréal, p. 193.

Note sur la curabilité en aliénation mentale—E. P. Chagnon, Longue Pointe, p. 212.

Six années d'expérience en chirurgie abdominale avec résultats ultimes et immédiats (suite et fin)—A. Lapthorn Smith, Montréal, p. 213.

MAY, 1896.

THE CANADIAN PRACTITIONER.

The drainage tube in abdominal surgery—J. F. W. Ross, Toronto, p. 313.

Gynæcology among the insane—Dr. Hobbs, London, Ont., p. 321.

Optico-ciliary neurectomy—G. H. Burnham, Toronto, p. 327.

Cycling for women—R. E. Doolittle, Toronto, p. 329.

THE CANADA LANCET.

What shall we do with our alcoholic inebriates ?—J. W. Grosvenor, Buffalo, N.Y., p. 299.

Acute broncho-pneumonia—P. D. Goldsmith, Peterboro', p. 304.

CANADA MEDICAL RECORD.

Comparative pathology—J. A. Macphail, Montreal, p. 357.

The pathology and complications of hydrocele—Thos. H. Manley, New York, p. 361.

Pure milk—J. Bradford McConnell, Montreal, p. 371.

THE CANADIAN MEDICAL REVIEW.

Hereditary syphilis—Allan Baynes, Toronto, p. 149.

DOMINION MEDICAL MONTHLY AND ONTARIO MEDICAL JOURNAL.

The criminal insane—A change in the law required—W. J. McGuigan, Vancouver, B.C., p. 481.

Case of laryngeal diphtheria treated by intubation and antitoxin alone—Dr. Horsey, Ottawa, p. 485.

What is a fatal dose of carbolic acid ?—J. J. Cassidy, Toronto, p. 488.

THE MARITIME MEDICAL NEWS.

Treatment of insomnia—W. H. Hattie, Halifax, p. 141.

Prophylaxis of tuberculosis—J. F. Macdonald, Halifax, p. 149.

L'UNION MÉDICALE DU CANADA.

Eclampsie puerpérale—Albert Laurendeau, St. Gabriel de Brandon, Que. p. 257.

Note sur un epithélioma hétéradénique de la région rétro-anale—M. Leguen et A. Marien, Montréal, p. 269.

Causerie Médicale—E. Merrill Desaulniers, p. 273.

LA CLINIQUE.

Une observation—Paul Prévost, Montrèal, p. 441.

Le système métrique (poid et mesures)—J. E. W. Lecours, Montréal, p. 452.

De la cocaine et de ses accidents—E. Delbosc, Paris, p. 454.

JUNE, 1896.

THE CANADIAN PRACTITIONER.

Address of the President of the Ontario Medical Association—F. LeM Grasett, Toronto, p. 394.

Tongue-like accessory lobes of the liver—A. McPhedran, Toronto, p. 401.

THE CANADA LANCET.

Sub-acute and chronic cystitis treated by vesical balloon—J. G. Clarke Baltimore, p. 339.

The exploratory incision in abdominal surgery ; its indications and technique —J. H. Carstens, Detroit, p. 345.

CANADA MEDICAL RECORD.

Massage in skin diseases—J. Leslie Foley, Montreal, p. 413.

Foods, their uses in disease—George Fisk, Montreal, p. 418.

Two cases of tubal pregnancy successfully treated by operation—F. R England, p. 426.

CANADIAN MEDICAL REVIEW.

Diseases of the oral mucous membrane—E. Herbert Adams, Toronto, p. 179.

Extra-uterine pregnancy operation—J. Spence, Toronto, p. 186.

THE DOMINION MEDICAL MONTHLY AND ONTARIO MEDICAL JOURNAL.

Dislocation of the acromial end of the clavicle, with reports of four cases—T. H. Manley, New York, p. 594.

Tracheotomy ; a few practical hints on the operation—Walter Hamilton Toronto, p. 596

MARITIME MEDICAL NEWS.

Treatment of heart disease—Lewis Hunt, Sheffield, N.S., p. 177.

Expulsion of a fibroid from the uterus four days after confinement—G. D. Turnbull, Hebron, N.S., p. 187.

L'UNION MÉDICALE DU CANADA.

Vagissements intra-utérin—J. B. A. Lamarche, Montréal, p. 321.

De l'hémorrhagie dans le cas de placenta prœvia, lorsque le fœtus est mort et macéré—J. A. Ouimet, Valleyfield, Q., p. 322.

Le nutrition et ses maladies (simples notes)—E. P. Benoit, Montreal, p. 328.

LA CLINIQUE.

De la conduite a terme pendant la période de délivrance dans un accouchement a terme—G. E. Larin, Montréal, p. 519.

De l'hémorrhagie dans les cas de planceta prœvia, lorsque le fœtus est mort et macéré—J. A. Ouimet, Valleyfield, Q., p. 635.

De la septicémie puerpérale—Elz. Montpetit, Montréal, p. 543.

Traitement de l'éclampsie puerpérale—Elphège Réné de Cotret, Montréal, p. 567.

De la septicémie puerpérale—G. A. Lacombe, Montréal, p. 617.

De l'eclampsie puerpérale—C. S. Gauthier, Montréal, p. 646.

Two Cases of Movable Body in the Knee-Joint---G. A. Bingham.

From the first case, a body measuring three-quarters of an inch long, half an inch broad, and half an inch thick, and held by a narrow pedicle, was removed under cocaine anæsthesia, with a good result. Both the patient's father and mother had suffered from rheumatism as long as he could remember. His only sister had also been a sufferer and he had himself had occasional slight attacks during the last ten years. The second case, a woman, who denied any tubercular or syphilitic history, had removed from her knee-joint a body the size of a large bean. Suppuration followed, and continued in spite of every effort to check it. It was thought that some syphilitic cachexia existed and under large doses of iodide of potash she improved considerably in health, though the local condition had not appreciably improved. The writer, after quoting Barwell's description of the origin of these bodies, expresses his opinion that they occur most frequently in persons with some cachexia, and that he would hesitate to operate in cases where a gouty, rheumatic, tubercular or syphilitic tendency was discovered, at all events before submitting the patient to a thorough course of constitutional treatment.

Hygiene of Canadian Railways.

The Ontario Board of Health, with a view of ascertaining the actual status of hygiene on the Canadian railways traversing that Province, sent a series of questions to the two large trunk lines, as well as to the Wagner and Pullman Companies running cars over those lines. The answers received were, in many respects, satisfactory and should convince the public that the interests of health are not only not neglected, but safe-guarded. The first question dealt with the ventilation of the carriages, and the replies showed that all the Companies used natural ventilation, fresh air entering the open door or windows of the carriage and escaping principally through the clear-story windows in the roof. The lavatories and closets were provided with specially designed ventilators. The replies regarding the cleansing of the cars were most satisfactory. The cars, as a rule, were washed out daily, or on long runs, swept out and dusted daily, and washed at the end of the run. Special attention was paid to the closets and urinals. After reading the replies given to this question one is obliged to draw inferences laudatory of the cleanliness of the carriages as compared with the of schools, court house and other public buildings.

The cars were, about once a year, thoroughly renovated and painted and upholstered, if necessary. The stuffy smell noticeable in first-class day cars and sleeping cars is partly due to the woollen and stuffed seats and backs, which in spite of frequent removal and beating still retain the animal odours emanating from the clothing and persons of their occupants. This will continue so long as the public will prefer green or red plush, to leather upholstered seats and backs, even with a wire spring seat beneath. The question, " What action do you take if an invalid occupies a berth ?" was intended to ellicit the method adopted in cleaning a sleeping car berth which had been occupied by a tuberculous patient, and it was found that such patients could occupy berths without hindrance. Patients with the other infectious diseases were not allowed to travel by day coach or sleeping car, but if such should occur, the cleansing and disinfection of the car followed as a matter of routine.

The question relative to heating showed that steam from the locomotive was now used, though the system of hot water heating still prevailed. The methods of lighting were unsatisfactory, for with a very few exceptions where the Pintsch gas was used, oil was the luminant employed. To the last, though by no means the least, important question asked, the replies showed that all precautions were taken to secure a supply of pure ice and pure drinking water.

Several valuable suggestions are offered in this report as to certain improvements that should be made, and if these are carried out travellers in Canada will enjoy better hygiene in railway carriages than in many public or even private buildings.

Tongue-like Accessory Lobes of the Liver---A. McPhedran.

Accessory lobes of the liver are found in a great variety of shapes and positions, and may lead to error in the diagnosis of abdominal tumours. From the interesting series of cases observed by him, the writer concludes, that their formation seems to be developmental, and not due to pressure, such as tight-lacing, nor to traction of an enlarged gall-bladder. The first case was a woman, aged 42, with well-marked symptoms of neurasthenia, with nervous dyspepsia, and constipation. The abdomen was full and tender in all parts, but especially to the right, below the costal margin, where a tumour-like mass could be felt, and which extended to an inch below the line of the umbilicus. The mass was smooth, semi-elastic and movable, and very tender on manipulation. From behind its lower border, near the inner margin, a secondary rounded mass projected, the whole descending with inspiration. Exploratory incision revealed a broad thin process of liver extending down to the umbilicus, and behind it and adherent to it, lay the right kidney, forming the rounded mass felt projecting from the lower margin. Two other cases were very similar to the first, except that the processes were long and narrow. Other cases were:

A woman who had a history of miscarriage, followed some time afterwards by discharge of a fairly large abscess into the urinary tract A well-defined mass in the right lumbar region, extending down nearly to the crest of the ilium, led to the diagnosis of an abscess in connection with the right kidney. Operation revealed the mass to be a tongue-like lobe of the liver, behind which lay the right kidney, to all appearance healthy. The situation of the abscess was not ascertained.

A baby, aged 11 months, presented symptoms of gastro-intestinal irritation, vomiting, restlessness, thirst, passing, with a good deal of straining, of small motions of green mucus. Examination revealed an elongated mass in the region of the ascending colon, which was found to be a finger-like lobe of the liver. The child died next day ;

death was found at autopsy to have been due to hæmorrhagic pancreatitis.

A man who, with symptoms of flatulent dyspepsia, vomiting and loss of weight, had a resistant mass in the region of the pylorus. Everything pointed to the existence of carcinoma as a grave possibility. Three months later, however, he had improved in health, when the mass could be more readily examined and was found to be broad and smooth, with a sharply defined liver-like edge and which was undoubtedly an accessory lobe. The man subsequently completely regained his health.

Kenneth Cameron.

Reviews and Notices of Books.

A Manual of Anatomy. By IRVING S. HAYNES, Ph.B., M.D., Adjunct Professor and Demonstrator of Anatomy in the Medical Department of the New York University, etc., with 134 half-tone illustrations and 42 diagrams. Philadelphia: W. B. Saunders. 1896.

The number of dissecting manuals already on the market makes it imperative that any new work on the subject should furnish good evidence for its *raison d'être.*

Dr. Haynes prefaces his volume with the statement that "nothing new is presented in the text except a slight contribution touching the visceral (thoracic and abdominal) relations obtained by means of 'composite" photographs." A distinguishing feature of the work are the illustrations, which are reproductions of photographs of original dissections. With the exception of those of the cerebral convolutions (which are excellent) these illustrations are unfortunately so indistinct as to be utterly useless to the student, and one wonders if they, too, are the result of "composite" photography. The same remarks will not apply to the diagrams which are mainly clever adaptations of well-known anatomical drawings. The directions to the dissector are most meagre, and the information is arranged in that semi-tabular form which reminds one of the "Quiz Compend," while the great number of "cross references" will not facilitate the work of the student. The index is particularly full, and the letter press, of course, excellent; but taking the book as a whole, we cannot see that it will be of any service as a student's manual, and it does not profess to be more. J. M. E.

Researches into the Anatomy and Pathology of the Eye. By E. TREACHER COLLINS, F.R.C.S., Assistant Surgeon to the Royal London Ophthalmic Hospital, Moorfield; Hunterian Professor, Royal College of Surgeons, England. 1893-1894. With 10 plates and 28 figures in the text. London: H. K. Lewis, 136 Gower Street. 1896.

It is difficult in a work like this of Mr. Treacher Collins' to particularize on any special point distinct from others.

It is pre-eminently the thorough work of a good student.

In his position as pathologist to the Moorfields Ophthalmic Hospital, he has access to a great quantity of material, of which he has made good use.

The great point he lays stresss on all through his book is the important factor that a knowledge of embryology is in helping to interpret the changes met with. In his own words: "Not only does embryology help to elucidate morbid processes, but I think I shall be able to show that very valuable suggestions as to doubtful points in the development of tissues may be obtained from the changes which occur in disease. The way in which these two subjects, Embryology and Pathology, mutually help to explain one another is the keynote of much that is to follow."

It would be superfluous to mention examples as the whole work abounds in them, it suffices to give the above paragraph as an indication of the lines followed in this study. Some points require further investigation, but enough is conveyed to demonstrate the truth of the author's premises.

The book is very clearly written in a plain straightforward way devoid of any haziness.

Mr. Treacher Collins has to be thanked for making a valuable addition to our knowledge of the pathology and anatomy of the eye. J. W. S.

In Sickness and in Health. A Manual of Domestic Medicine and Surgery, Hygiene, Dietetrics and Nursing. J. West Roolevelt, Editor. Pp. 991. New York: D. Appleton & Co.

It is a difficult thing to write a book on medicine for the laity, but in this work the editor seems to have included all necessary information without, on the one hand, becoming too technical nor, on the other, encouraging people to become " every one his own doctor." The advice given will indeed have the opposite effect, that of preventing unskilled persons meddling with serious conditions. As an example we may quote the following sentences: "There is no application which will take the place of a free opening for the escape of wound discharge." Again, in speaking of poultices, "The action of a poultice is to spread the poison and to render the tissues less liable to resist the bacteria."

These two extracts from the chapter on the treatment of inflamed wounds indicate the manner in which the book is compiled. There are plenty of plates to illustrate the text, and as all conditions likely to arise in the family are dealt with, the work may prove a most useful one.

R. C. K.

Society Proceedings.

MONTREAL MEDICO-CHIRURGICAL SOCIETY.

Stated Meeting, May 16th, 1896.

A. D. Blackader, M.D., President, in the Chair.

Discussion on Albuminuria.

Dr. R. F. Ruttan and Dr. H. A. Lafleur introduced the subject.

Dr. F. W. Campbell said he would confine the few remarks which he would make to a form of albuminuria, of which he had had a great many cases, in fact was meeting with very frequently—he meant what is termed normal albuminuria. Most medical writers use the term albumen, but the most modern authorities call it albumin. The word albumen is simply the Latin word, meaning "white of the egg," though as a matter of fact it is applied to every form of albumin, the latter representing the proximate principle. In Watt's Dictionary of chemistry, one of the most important works of its kind in the English language, the termination *in* is exclusively used. That the mere presence of albumin in the urine or its absence does not indicate that nephritis exists or does not exist, is not generally recognized. The former is, however, often a phenomenon of such grave import that its recognition and meaning is a matter which demands serious consideration. It is now fully admitted that albumin may be met with in the urine as a physiological event, sometimes small, sometimes in fairly large quantity; sometimes transient, sometimes remaining for weeks, and be perfectly compatible with perfect health. In this category he did not include the albuminuria following deranged digestion, great mental or physical exertion, excesses in eating or drinking, or exposure to low temperature, because although it is sometimes found in the urine during all these conditions, its discovery under such circumstances is extremely difficult, even with the most delicate tests. The cases to which he referred were those where with the ordinary tests albumin is readily found in the urine of persons enjoying perfect health, and we cannot find any assignable cause. It was during his work as a life insurance examiner that he met with the great majority of these cases. He referred only to renal albumin and not to cases which accompany blenorrhœa, vaginitis or cystitis. The first suggestion of its existence was made by Gabler in 1865. In

1870 Ultzmann recognized albumin in the urine of eight perfectly healthy persons. From that time onward the number of cases largely increased, this discovery in the majority of instances being due to life insurance examinations. He said how this came about would be readily understood when he stated that a few years ago the urine of a life insurance candidate was only examined under special conditions and therefore rarely, whereas now it is examined in every case Such an important fact has attracted a great deal of attention, and some writers have attempted to explain that its presence was due to some pathological cause, which in many instances is of so slight a nature as to be overlooked. Chateauburg found that the urine of 46 out of 50 pupils at one of the government schools, who were busy preparing for examinations, contained albumin. The same authority after numerous experiments came to the following conclusions:

1. Albumin is found in the urine of the majority of persons, more or less abundantly, and transient in its character.

2. Rest in bed has a clearly marked influence in diminishing the amount of albumin excreted.

3. Bodily fatigue greatly influences the production of physiological and transient albuminuria.

4. Intellectual labour augments with most people the quantity of albumin existing in the urine.

5. Cold bathing exerts considerable influence in increasing physiological albuminuria.

6. Sexual excitement and menstruation manifestly affects albuminuria in the healthy.

7. Albuminuria is as frequent in children as in adults, but the quantity of albumin excreted is less.

8. Digestion if accompanied by rest does not exert much influence upon physiological albumin.

Dr. Campbell, in conclusion, said that these investigations were of practical importance, as the discovery of albumin is calculated, unless its significance be understood, to create undue anxiety. With its real meaning understood, and with a microscopic examination, the physician is in a position to reassure his patient and to avoid the errors of unnecessarily energetic measures of relief from dangers which do not exist. The microscope is the only reliable test as to whether or not renal disease does or does not exist.

Dr. J. B. McCONNELL thought that the subject had been very fully covered by both the papers, and that it was one of the greatest importance from a life insurance point of view. He drew attention to the point that in testing with nitric acid and heat, acid albumen, which is soluble in water, may be formed and lead to an error. He noted that both speakers had rejected the pressure theory, but thought that the fact that albuminuria occurred after violent exercise in athletes and soldiers rendered the theory probable.

Dr. J. G. ADAMI was glad to see, from what had been said by the readers of the papers, how fully it was accepted now-a-days that Heidenhain was right, and that the presence of albumen in the urine must be regarded as due to a disturbance of the secretory mechanism of the glomerular epithelium.

At the same time he had to confess that since he wrote his first paper on this subject in 1886, his views had undergone some slight modification. Then he had held that all the albumen appearing in the urine must have passed through the glomeruli. He would not say that he felt convinced even now that this is not the case, and he certainly believed that the main bulk of the escaping albumen passed through the glomeruli; but there were certain cases of extensive and acute congestion of the kidneys, as in acute parenchymatous nephritis, in which there is a most pronounced breaking down of the protoplasm of the convoluted tubules; and with such breaking down he considered that there must be a certain amount of albumen passing into the urine, originating thus from the disintegration of the cells. In the mammary gland the secretion is largely the result of active cellular destruction, and milk is rich in proteids. This breaking up of the cells in the kidney tubules is, as is well known, associated with the development of curious vacuoles, which eventually are to be recognized free in the lumen of the tubules. As to the exact composition of these delicate vacuoles, nothing is known, but certainly they can be and are associated with cell destruction and approaching dissolution.

Dr. N. D. GUNN referred to several classes of albuminuria of interest to the general practitioner. The albuminuria of pregnancy was of interest because of the liability of serious trouble later on. If the case is seen early enough, the condition can be controlled, but if the patient is allowed to follow her daily avocations, it goes on to uræmia too often. This is really a physiological albuminuria passing off with the birth of the child. The amount of albumen present is no index of the conditions present; it was not the amount of albumen secreted, but the amount of toxic products in the blood not excreted, which did harm.

Another class of cases was that in which there were nervous symptoms, the commonest being occipital headache, aud where this was associated with a high tension pulse, a diastolic valvular action, coupled with hereditary taint, even though no albuminuria was present, a pre-albuminic stage might be pronounced. Spasms of the calf muscles of the legs during sleep ; electric shocks experienced by persons falling to sleep, auditory symptoms and itchiness of the skin which singly may mean nothing, combined would lead one to suspect toxic products circulating in the blood.

Dr. C. F. MARTIN drew attention to the absence of albuminuria occasionally where most extensive lesions of the kidneys might be found. This occurred not only in conditions of chronic interstitial nephritis of the ordinary type, and in senile renal changes, but in other conditions as well. He had for some time made examination of the urine of moribund patients at the Royal Victoria Hospital, and subsequently observed the renal changes detected at the autopsies. In a number of instances there had been apparently normal urine as examined carefully in the usual manner, and yet the kidneys had often presented distinct evidence of parenchymatous change, with degeneration of the tubular epithelium and the presence of detritus in the lumina of the tubules. In a large number of cases, too, there was apparently a recent productive change as well, and yet the urine was free from albumen.

Examination of fresh sections under these conditions had showed, too, considerable fatty degeneration of the epithelium, and yet the urine had been normal. A few cases are on record where extensive fatty change and necrosis in the parenchyma had been present with unaltered urine.

Rosenstein has recorded one such instance. These facts would seem to render it all the more probable that the glomerulus is, after all, mainly responsible for the incidence of albuminuria

That the epithelium is, however, to some extent capable of influencing the presence of albumen may be argued from the theory generally recognized that hyaline casts *i.e.*, an altered form of albumen, seem at times to originate from the epithelial cells of the tubules ; yet in these instances the circulatory system must be undoubtedly altered, too, in order to induce an albuminuria which responds to the usual tests. To say that the so-called physiological albuminuria is really a misnomer, and that the presence of discernible albumen in the urine implies some lesion of the renal structures would seem quite rational on an analogy with the conditions usually found in ordinary parenchymatous nephritis. Under those circumstances it is only local areas of the kidney that are affected, while adjacent parts appear quite normal. In the same way when only a trace of albumen is present, it is more than probable that some minute local lesion of the parenchyma is present as a cause of the abnormal urine.

An interesting condition, too, in which sometimes the kidneys are extensively diseased without albumen being found in the urine, is manifested sometimes in the case of neoplasms. Two such samples, which were passed around, showed in the one case sarcomatous nodules involving nearly all of both kidneys, while in the other a metastatic cancer had affected more than two-thirds of both organs, and yet the urine in each case had been normal within a few days of the respective patient's death.

Dr. W. F. HAMILTON referred to two cases of albuminuria in connection with angina.

In one seen in Vienna there was no evidence of infectious disease and it was looked upon as a case of general infection from streptococcus. In the other, under Dr. Buller's care, there was mild angina, a little later severe nervous symptoms, and later again albumen casts were demonstrated in the urine.

He emphasized the importance of determining the presence of peptone as already referred to by the leader in the discussion.

In the occurrence of casts without albumen, he thought it was possible that the albumen was so minute in quantity as to escape detection by the tests ordinarily employed.

Stated Meeting, May 29th, 1896.

F. G. FINLEY, M.D., FIRST VICE-PRESIDENT, IN THE CHAIR.

Myxo-Sarcoma of the Femur.

Dr. JAS. BELL reported this case, a report of which will be published later.

Excision of the Rectum by Heinecke's Method.

Dr. G. E. ARMSTRONG reported the following case and showed the patient :

M. M., æt. 58, was admitted into the Montreal General Hospital suffering from carcinoma of the rectum. The growth involved the upper part of the external sphincter and the whole circumference of the rectum as high as the finger could reach. It was quite evident that the whole growth could not be removed from the perineum and that the sphincter was so much involved that it could not be saved. The lumen of the rectum was so much encroached upon that only liquid fæces could be passed.

On the 5th of March I performed a left inguinal colotomy after the method of Maydl. and on the 27th of March proceeded to remove the growth according to Heinecke's method.

First, I placed the man in the lithotomy position, and after introducing a sound through the urethra into the bladder to act as a guide, I made a curved incision in front of the anus and carefully separated the rectum and all infiltrated tissue from the urethra, prostate, and posterior surface of the bladder. This being accomplished, and all bleeding points controlled, I turned him on to his side and made a median incision down over the centre of the sacrum and coccyx. I then with a saw divided the sacrum and coccyx in the line of the superficial incision, and the sacrum transversely below the level of the third sacral foramen. I could then out-fold my two flaps. This gave me perfect access to the pelvis. I then deliberately opened the peritoneal cavity and separated the rectum and meso-rectum from the anterior surface of the sacrum until I was well above the limits of disease. I could catch the large vessels in the meso-rectum before dividing them, thus reducing the hæmorrhage to a minimum.

After all bleeding points were secured, and when I was ready to close the opening in the sacrum and soft parts, the rectum was divided at a point well outside the body, thus insuring against infection. The upper end of the rectum was attached externally.

The patient has made a perfect recovery, has gained in weight and is now, as you see, in comparatively good health. He walks well, can sit down with comfort, and does not seem in any way to suffer from the division of the sacrum or coccyx.

This method gives good access, enables the operator to reduce the loss of blood to a minimum, and if the lower end of the rectum and sphincter are free from disease, permits of the union of the upper to the lower end, with subsequent closure of the colotomy wound and the removal of enlarged lymphatic glands.

Dr. JAMES BELL considered the great drawback to excision of the rectum was the almost constant involvement of the pelvic glands. He recommended inguinal colotomy as a preliminary operation in order that a more perfect diagnosis could be reached, and where the glands were not involved a further operation could then be performed.

Volitional Tremor Simulating Disseminated Sclerosis.

Dr. G. GORDON CAMPBELL exhibited the patient and gave the following account of the case :

L. F., a French-Canadian aged 71, came to the Out-patient Department of the Montreal General Hospital two years ago complaining of shortness of breath and swelling of the legs. Physical examination revealed the presence of valvular disease of the heart. At the same time a tremor of the upper extremities was noted, and enquiry elicited the fact that the patient had suffered from it all his life and it had not interfered with his occupation of carpenter and cabinet-maker. The tremor was distinctly "intentional" in character, being absent while the limbs were at rest and becoming marked on the performance of voluntary movements. It was best brought out in the act of writing or lifting a cup of water to the mouth; was more marked on the left side and was increased by emotion. Fine movements, such as threading a needle, were performed without difficulty. No other symptoms indicative of sclerosis were present, and the personal and family history had no bearing upon the case. After being two years under observation the condition described was unchanged.

Dr. J. B. McConnell referred to an almost identical case in which the legs also were affected. He looked on it as insular sclerosis without other symptoms.

Dr. F. G. Finley had examined the case and thought it was difficult to classify tremors of this sort. He had noticed a report of two cases in Berlin recently. In one which had been diagnosed as hysteria the post-mortem revealed disseminated sclerosis. In the other, thought to be sclerosis, no lesions were found.

Tubercular Ulceration of the Cæcum.

Dr. J. G. Adami exhibited this case, which showed peculiarly extensive tubercular ulceration and loss of tissue. Tubercular ulceration of the cæcum and of the colon is relatively common, but in general the ulcers are not very extensive. Here the ulceration had been so extreme that over the greater part of the cæcum there was one large area of ulceration. A few stray islands of mucosa persisted sharply cut off from the floor of the ulcer, which was granular, but relatively smooth. The ulceration extended into the colon, where the largest ulcer (in the ascending portion) was 10 cm. long and completely surrounded with the narrowed viscus. There was a well marked patch of ulceration in the appendix, and again another ulcer within 1 cm. of the anus. This had perforated and communicated with the skin immediately outside the anus, forming a fistula. The specimen was obtained from a girl of 24, presenting chronic ulcerative tuberculosis of the epiglottis, larynx and trachea, and of the small intestines and peritoneum.

Dr. Wyatt Johnston asked Dr. Adami if he had noticed and could explain the difference in the distribution of tubercular ulceration of the ileum. In one set of cases the lesions were limited mainly to the typhoid position, namely, the lower part of the ileum; in the other they were more numerous in the duodenum and upper part of the jejunum and scanty or absent in the lower part.

Dr. ADAMI had noted a great number of cases in which there was simulation of the typhoid distribution, but had not noticed so many where the upper end of the intestine was affected.

Wounds from Firearms.

Dr. WYATT JOHNSTON exhibited a series of specimens illustrating the various wounds produced by firearms.

Pure Milk.

Dr. J. B. McCONNELL read a paper on this subject, in which, after dealing with the composition and impurities often found, he gave in detail the precautions that should be taken to ensure a supply of pure and wholesome milk to the consumer.

Concurrent Diabetes and Exophthalmic Goitre.

Dr. C. F. MARTIN read the following case report: The coincidence of two such maladies as diabetes and exophthalmic goitre in the same patient has already been recorded in not a few cases, and yet each newly added instance is of more than ordinary interest in view of the apparently associated features in their etiology. The subjoined report is therefore very briefly submitted, though without any effort to comment on the nature of such an association.

A French-Canadian aged 28, who was a piano maker by trade, came to the out-patient department of the Royal Victoria Hospital complaining of frequent micturition, excessive appetite, general weakness and persistent sweating. He had been ill about one year, the weakness being an early symptom and progressive, while the micturition, sweating and increased appetite supervened some months later. To these signs were added a gradually developing tremor, great nervousness, palpitation, and dyspnœa on exertion; also gastric disturbances with occasional obstinate vomiting. During the year he had lost about twenty pounds. There was no history of diarrhœa.

He was a man of temperate habits, and except for the usual diseases of childhood he had always enjoyed good health. The family history presented no evidence of hereditary taint.

An examination of the patient showed him to be a remarkably thin young man, with small, soft muscles and moist skin. His eyeballs were markedly prominent, giving him an expression of terror and anxiety. Von Graefe's and Stellwag's signs were distinct; that of Möbius could not be definitely made out.

The thyroid gland was enlarged bilaterally and rather soft.

His pulse was of low tension, soft and rapid, beating 150 to the minute. The heart sounds were normal. The respirations were increased in number, but the lungs themselves appeared free from disease.

The urine was pale and clear, acid in reaction, sp. gr. 1035; a small quantity of albumen was present and a large amount of sugar.

The nervous system was not abnormal further than is implied in the symptoms just mentioned.

He was admitted to the wards for a few days and further notes of the case were made by Dr. Fry, the house physican. During his sojourn he had slight pyrexia, a constantly rapid pulse, persistent nervousness and excitability. The glycosuria remained unaltered in amount, though there was never marked polyuria. He was discharged after twelve days and for a short time only attended the dispensary. Just one year later he returned to the out-patient department of the hospital, where I again examined him. He had maintained fair health in the interval; the goitre had somewhat increased in size, and there was still a large quantity of sugar in the urine.

The above notes, which though brief, state the main features of the case, are sufficient to render it certain that we were dealing with a case of true diabetes associated with Grave's disease, and not merely a transitory glycosuria. And their concurrence is especially interesting in view of the numerous analogies which may be formulated in their respective etiologies and morbid anatomy. In both diseases, for example, heredity is thought to play a part; both occur in neurotic individuals, and not infrequently are preceded by great mental excitement, worry, fright, etc., sometimes, too, after trauma, and in both we find individuals affected at the same period of life.

Regarding the morbid anatomy, it is recognized that in both of these affections lesions of the sympathetic system are often manifest, or again, injuries of the fourth ventricle, tumours, hæmorrhages, parasites, etc., while experimentally evidence may be adduced to some extent along these same lines.

That some definite analogy exists would further appear evident in view of the experiments recently made by Falkenberg upon dogs. He records that in several instances the extirpation of the thyroid gland has been superseded by diabetes.

Perhaps the most suggestive work upon this subject is that of Laucereaux, who in a clinical lecture published in the *Semaine Médicale* of March, 1895, discusses the subject of trophoneurosis. He relates several instances in which patients have manifested three different conditions, all of which he regards as very closely related in their etiology, viz., acromegaly, diabetes and exophthalmic goitre. He tends, therefore to group the three conditions together, their pathological significance implying some vaso-trophic neurosis.

Similar suggestions have emanated from other authors, mainly in France, among others from Henrot, of Rheims, and from Valat.

In conclusion it may be said that while the occurrence of transitory glycosuria is a fairly common occurrence perhaps in marked forms of Graves' disease, and that in two cases recently in the hospital we have met with that condition, nevertheless the permanent presence of glycosuria with other definite symptoms of diabetes seems to be very much more infrequent.

Stated Meeting, June 12th, 1896.

F. G. FINLEY, M.D., FIRST VICE-PRESIDENT, IN THE CHAIR.

Lymphangioma of the Tongue.

Dr. G. E. ARMSTRONG exhibited a photograph of the tongue and read the following report:

This photograph represents a lymphangioma of the tongue which I removed from a young woman 22 years of age. She first noticed it fifteen years ago. It occupied the right anterior third and a portion of the left side of the tongue. During the past few years it has been growing rather rapidly, and when she was admitted into the hospital it was so large that she could not bring the upper and lower teeth together for purposes of mastication and it seriously interfered with speech. I removed it by a V-shaped incision and fortunately obtained perfect union by first intention. Dr. Johnston reports it to be a lymphangioma. It is doubtless of the same nature as the enlargement in macro-glossia, but the lymph spaces are very distinct—more so, I think, than is generally the case in the latter condition.

Dr. F. G. FINLEY asked if the glands were affected and if there were lymphatic growths in the other parts of the body as well. Dr. Armstrong replied that they were not affected.

Dr. J. G. ADAMI asked if the vesicles were thin walled and showed any tendency to rupture, and was answered in the negative.

A Case of Bacillus Aerogenes Capsulatus.

Dr. W. H. JAMIESON read a paper on this case. (See page 119.)

Dr. J. G. ADAMI congratulated Dr. Jamieson on getting pure cultures. He also had found that he rarely got the capsule except where the organisms were present in great masses, as in the kidney when a distinct halo was noticed between the various bacilli. He found them to stain well and some of the best results obtained were from hæmatoxylon.

Dr. G. E. ARMSTRONG referred to the clinical history as given by Dr. Jamieson, and said after the patient was brought into his ward there had been a sudden change for the worse, and the condition seemed to be that of acute anæmia due to a fresh hæmorrhage. The patient had taken ether badly, and before the incision a litre of normal salt solution was injected into a vein and the condition improved. On emptying the cavity another litre of salt solution was given, but the patient died while he was exploring the cavity.

Branchiogenic Cyst.

Dr. J. G. ADAMI reported this case, which will be published later.

Dr. JAS. BELL said the patient had been sent to him with the diagnosis of a suppurating lymphatic gland, which he confirmed. On making his incision he opened the cyst, the contents of which were like *café au lait*, with very little, if any, grumous material. He was struck with the ease with which the mass was dissected out, quite unlike lymphatic glands in general.

Resection of Bowel.

Dr. J. ALEX. HUTCHISON read the following case report:

M. St. J., aged 48 years, was admitted to ward K, Montreal General Hospital on April 14th, 1896, suffering from obstruction of the bowels of six days' duration.

The patient was unintelligent and could give no satisfactory history of her illness.

On examination no signs of abdominal obstruction could be made out, the walls were flaccid. In the right inguinal region a small round tumour was felt, freely movable, with flat percussion note; no impulse on coughing. Friends stated this had been present for nine years.

Temperature 98°, pulse 100, respiration 24. No pain or vomiting.

Large enemata of hot water and of olive oil were given without relief.

On the 15th I opened the abdomen in the median line and finding the small bowel passed through the internal abdominal ring, sutures were applied to the wound and an incision made over the tumour, and the bowel drawn down after cutting the stricture.

A gangrenous patch with a perforation was found. Resection of about $2\frac{1}{2}$ inches was done, the ends being brought together by Czernay-Lembert sutures and the parts returned.

On the 16th and 17th the patient did fairly, but signs of collapse were present. On the 18th the condition was desperate; some stertoraceous vomiting, but the condition improved; retained nourishment; bowels moved with no pain; tenderness on tympanitis.

This condition continued for some days, when collapse returned, the patient dying of exhaustion on the 27th, or twelve days after operation. Temperature was sub-normal from date of admission, for several days remaining at 96°. Pulse between 100 and 120 per minute.

[Notes from case report of Dr. McDonald, house surgeon]

THE

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THE CANADIAN MEDICAL ASSOCIATION.

Judging by the preliminary programme just received, the coming meeting of the Canadian Medical Association in this city, under the presidentship of Dr. Thorburn, of Toronto, promises extremely well. Many papers of interest and importance are to be read, and at the several city hospitals, the Notre Dame, the Hôtel Dieu, the Montreal General, and the Royal Victoria, clinical cases of much interest, either medical or surgical, will be shown.

On behalf of the profession in Montreal we desire to extend a hearty welcome to all our professional friends in the Dominion who purpose being present, and to assure them that Montreal will endeavour to make the three days pass pleasantly as well as profitably.

The following is a list of the papers already promised for the coming meeting of the Canadian Medical Association :

President's address, Jas. Thorburn, Toronto ; Address in surgery, John Stewart, Halifax ; Address in medicine, Geo. Wilkins, Montreal ; Address in bacteriology, J. G. Adami, Montreal ; Address in midwifery, J. F. W. Ross, Toronto ; Hæmorrhagic pancreatitis, A. McPhedran, Toronto ; One hundred cases of retroversion of the uterus, treated by ventro-fixation and Alexander's operation, with results, A. Lapthorn Smith, Montreal ; The influence of mitral lesions on pulmonary tuberculosis, J. E. Graham, Toronto ; A note on amputation at the hip joint in tubercular disease, A. Primrose, Toronto ; Tetany following scarlatina, J. B. McConnell, Montreal ; The foot, its architecture and clothing, B. E. McKenzie, Toronto ; Ophthalmia neonatorum, R. Ferguson, London ; Observations on the relation between leuchæmia and pseudo-leuchæmia, C. F. Martin and G. H. Matthewson, Montreal ; Etiological treatment of acne vulgaris, A. R. Robinson, New York ;

Thyroidectomy, D. Marcil, St. Eustace, Que.; Some observations on the heredity of carcinoma, T. T. S. Harrison, Selkirk ; Some applications of entomology in legal medicine, Wyatt Johnston and George Villeneuve, Montreal ; Electric baths and dyspepsia, A. L. de Martigny, Montreal ; Physiological demonstrations of interest to medical men, Wesley Mills, Montreal ; The theory of the eliminative treatment of typhoid fever, W. B. Thistle, Toronto ; Oral surgery, S. Lenox Curtis, New York ; Clergyman's sore-throat (?), J. Price Brown, Toronto ; Vaginal fixation of the round ligaments for backward displacements of the uterus, Hiram N. Vineberg, New York ; Non-malignant tumours of the tonsil, with report of a case, H. D. Hamilton, Montreal ; Sinus thrombosis, associated with acute suppurative otitis media, occurring during scarlet fever, J. W. Stirling, Montreal ; *(a)* Exhibition of an artificial nose-bridge, *(b)* Some cases of foreign bodies in the eye, in which the electro-magnet was used successfully, F. Buller, Montreal; Remarks on cold air in the treatment of pulmonary tuberculosis, Edward Playter, Ottawa ; Hereditary cerebellar ataxia (with patient), D. Campbell Myers. Toronto ; A report on three cases of abdominal section for conditions comparatively rare, H. Meek, London ; Early atrophy of muscles in cerebral disease, Frederick G. Finley, Montreal ; Militia medical reorganization, W. Tobin, Halifax. Papers have also been promised by Drs. J. D. Thorburn, of Toronto ; Wm. Osler, of Baltimore, and F. J. Shepherd and H. S Birkett, of Montreal.

THE BRITISH MEDICAL ASSOCIATION.

The meeting of the British Medical Association just brought to a close has, from all accounts, proved one of the most successful in its history. Carlisle, though a comparatively small city, has outvied many larger cities, not only in the extent of its welcome, but in the perfection with which all the detailed arrangements for the meeting were carried out.

What interests Canadians most, however, in connection with this meeting is that the invitation extended by the Montreal branch of the Association to hold the next annual meeting in this country was enthusiastically received and very courteously accepted.

This action must be considered as a particularly graceful compliment to the whole profession in Canada, as it will unquestionably involve a considerable loss of time and expense to the members of the profession in the mother country. We trust, therefore, that all members of the profession in Canada, and particularly in Montreal, the city chosen for the meeting, will vie with one another in endeavouring not only to make our individual guests heartily welcome, but also to make the meeting of 1897 a complete success.

Much credit is due to our *confrères*, Dr. Armstrong and Dr. Adami, who were present in Carlisle, for their successful urging of the claims of our branch, and also to our Toronto friends, Dr. Cameron, Dr. MacCallum, Dr. Peters and Dr. Doolittle, who, we understand, gave every assistance in their power to our representatives, nor would we forget the names of Sir William Hingston and Professor Osler, who at previous meetings have strongly urged the claims of the colonial branches. We rejoice at the result and feel that with the meeting of the British Association for the Advancement of Science in Toronto next August, followed shortly by the meeting of the British Medical Association in this city, next year will indeed be a red letter year for Canadian science.

It behooves not only the respective Provincial Legislatures and the Parliament at Ottawa, but also liberal-handed citizens throughout the Dominion, to come forward generously with assistance and enable those in charge to make both meetings an unqualified success.

We must acknowledge also the honour which our English *confrères* in this Association, probably the most influential medical body in the world, have conferred upon the profession in Canada. Following close upon the appointment of Sir William Hingston a few years ago to read the surgical address at the meeting in Nottingham, comes the selection of Dr. Roddick, Professor of Surgery in McGill University and President of the Montreal Branch, to fill the high office of President of the General Association. We are confident that no effort will be wanting on his part to elicit the best efforts of the Canadian profession in assuring a successful and enthusiastic meeting.

NEW BOOKS, ETC., RECEIVED AND NOTED.

System of Surgery, Vol. IV. Edited by Fred. S. Dennis and John S. Billings. Lea Brothers, New York and Philadelphia.

Archives of Clinical Skiagraphy. Edited by Sidney Rowland, B.A. London: The Rebman Publishing Co.

Hydro-galvanism of the Urethra. By Robert Newman, M.D. Reprint from the transactions of the Electro-Therapeutic Association, 1896.

Post-nasal Adenoid Hypertrophy. By J. E. Schadle, M.D. Reprint from the Laryngoscope, July, 1896.

The Sanatorium or Closed Treatment of Phthisis. Reprint from the New York Medical Journal, June 15, 1896.

The Value of Respiratory Gymnastics. Reprint from the Boston Medical and Surgical Journal, May 28, 1896. By Edward O. Otis, M.D.

Affections of the Lingual Tonsils. B. W. Scott Renner, M.D.

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Original Addresses.

THE PRESIDENT'S ADDRESS.

DELIVERED AT THE ANNUAL MEETING OF THE CANADIAN MEDICAL ASSOCIATION, MONTREAL, AUGUST 26TH, 1896.

BY

JAMES THORBURN, M.D., Toronto.

I desire in the first place, to thank you for the honour you have conferred upon me in making me President of this great Association. I consider it the highest honour in the gift of the profession of the Dominion of Canada. When I think of the eminence of my predecessors, I have great apprehension of my ability to meet your expectations; but, gentlemen, relying on your kind assistance and loyal support, I will fulfil the duties of my office to the best of my skill.

During the past year many bright men have gone the way of all living. Medical science has lost her most valued son in Pasteur. Although many names are prominent in connection with the recent great advances that have been made in medicine,—that of Pasteur will always be pre-eminent. He may fairly be credited with having put the germ theory of disease beyond all dispute. Protective inoculation, apart from Jenner's work, was first understood and successfully applied by him. The surgery of the present day owes its success very largely to him. Lister was stimulated to carry out his early experiments upon suppuration and infection in consequence of following Pasteur's researches upon fermentation, including ammoniacal fermentation of urine in the bladder. More recent therapy owes much to him. His success in the handling of patients, who were presumably inoculated with rabies, is well known, and there can be little doubt that the serum-therapy of to-day comes indirectly from

Pasteur's labours. It may be that the results of the work of Pasteur and a host of others on the lines indicated, are not yet thoroughly understood or appreciated by the profession generally; but the knowledge that we have recently obtained respecting both the diagnosis and treatment of such diseases as hydrophobia, anthrax, tetanus, diphtheria, tuberculosis, Asiatic cholera, typhoid fever, and septicæmia has already been productive of good results and is likely to do much more in the future. Some are still sceptical as to the good that has been accomplished through modern serum-therapy, but the ordinary conservatism of our profession has some influence now, as it so frequently had in the past, in preventing us from accepting new theories. One of the most remarkable instances of extreme conservatism that we know of, was the opposition that Jenner encountered when he gave to the world the result of his experience in his work in connection with vaccination. At the present time the number of those opposed to vaccination is very small indeed. The centenary of the vaccination of James Phipps, by Jenner, has recently been celebrated over the civilized world, and well might it be.

By the discovery of vaccination and its subsequent use, more lives have been saved than all the wars devised by the wickedness of man have destroyed; and I think it would be in keeping with the custom of our profession if some resolution were passed by this Association expressive of our gratitude for this wonderful discovery.

In considering the different events of the past year it becomes my melancholy duty to refer to the deaths of some of our ablest and most highly respected members. Drs. Fenwick and Saunders, of Kingston, and Dr. McFarlane, of Toronto, were well known to most of you as highly successful medical practitioners and worthy and honourable men in all respects. They have gone from our midst, and it is difficult for us who are left to realize the sad fact that we will never more see their kindly faces at our meetings. It is a somewhat remarkable coincidence that these three honoured members of our Association died from septic poison, received while in the discharge of their duties, and their deaths must ever remain as witnesses of the self-sacrifice and devotion of our noble calling. No soldier leading a forlorn hope died a braver death. The duty of the military man is to destroy life and weaken the enemy; that of the medical man is to relieve pain and prolong life. May their honoured names forever remain green in our memories.

An important subject for us to consider, gentlemen, is a common registration for the Dominion, or inter-provincial reciprocity. The various Provinces of our Dominion have regulations as to their medical curricula, which, while generally satisfactory from a local point of view, are widely divergent. This condition of affairs has been unavoidable. The wide extent of our country with a sparse population, especially in certain localities, has made it difficult to maintain a uniformly high standard of medical education, both in the preliminary and regular medical courses. I think, however, the time has arrived when the obstacles in the way may be overcome by mutual concessions on the part of the different provincial medical authorities.

The importance of obtaining a common standard for the whole Dominion cannot be questioned. As it is now, the physician's license does not extend beyond his own province. I have, however, every reason to believe that with a common Canadian standard we could have reciprocal registration with the motherland, as already provided by the Imperial Statutes, 1888, and then we would have uniformity of registration, not only in the Dominion, but throughout the Empire, of which we are all so proud, and whose banner, wherever it waves, is the emblem of civil and religious liberty.

Speaking as a member of the Ontario Medical Council, I may say we have always endeavoured to maintain a high standard of preliminary and medical education. I have no doubt, however, that our Council would give careful consideration to any scheme unanimously recommended by the Canadian Medical Association.

The want of uniformity of registration in the different provinces is not only detrimental to our common progress and national unity, but has a tendency to drive away many good and valuable men from our land. As the law stands now, we are simply localised practitioners, liable to be prosecuted if we venture to practice beyond our immediate province. The making of a curriculum suited to the whole Dominion is not an easy matter. After having considered the question with some care, and having consulted with some of the most prominent teachers and practitioners in the various provinces, I would suggest that throughout the Dominion a four years' course with sessions of eight or nine months each, be devoted to lectures, hospital, and laboratory work. I should not have the number of didactic lectures increased, but the number delivered daily decreased, and I should recommend that no lecture should occupy more than forty-five minutes. As it is at present, nearly the whole day is spent by the student attending lectures, leaving little or no time for the important branches involving observation and research. The five years' course with winter session of six months, and one summer session of three months, is, in my opinion, not equal to a four years' course with sessions of eight or nine months. We all know from personal experience that the six months' term is practically but a five months' session; for allowance must be made for the two weeks' holiday at Christmas, and the last two weeks in March, which are taken up in examinations, etc. The long interval between the cessation of lectures in March and their commencement in October, over six months, is practically a barren period to most of the students. In the longer session of eight months, the student could divide his time to better advantage between attending lectures and taking part in practical work at the bedside, laboratory, etc. In addition, it would afford him some time for social life, which, in these days of rush and hurry, is sadly neglected, frequently to the detriment of many well informed medical men, and in consequence of which they frequently fail to attain that success in life to which their professional knowledge entitles them. We should not only be educated men, but also men of gentle deportment and good manners.

I hope, gentlemen, that the committee appointed at our last annual meeting on reciprocal registration, will be able to report favourably for the eight months' session, as I am thoroughly convinced that such a course would be better both for the student and teacher.

Another subject of very considerable importance is the relationship of medical men to life insurance. Heretofore no special reference has been made to the subject. It has a most practical bearing on the success of every medical man. It is a well known fact that many physicians can diagnose a disease with almost a perfect certainty, but from lack of special training as to the probable expectation of life, are often at a loss to state, with any approximate degree of certainty, what that may be in any individual life.

It has been said. and truly so, that the medical examiner is the watchman at the gate of entrance to life insurance. His office is a most sacred one, and, from the fact that so much confidence is placed in him, it is his duty to shield his company from every appearance of imposition. Examining for life insurance is so important, and the amount paid in medical fees so enormous, that in common fairness and honesty, physicians should fit themselves most thoroughly for this branch of their profession. This has been recognized by the University of Vermont, which provides a course of lectures in life insurance medical examinations. The services which every first class insurance company is seeking, are those of the educated, scientific, and skilled physician. The companies require the very best services that can be obtained. In our own Dominion the monied interest involved in life insurance is enormous. The obligations of the regular life institutions alone to policy-holders amount to about three hundred and twenty millions of dollars, and in this I do not include the numerous benefits of friendly and assessment societies. These figures are being augmented each year by about twelve millions of dollars, and in the past twenty years alone, they have been increased about four fold. The profession receives from the companies for medical examination fees yearly a sum not less than $150,000, and if we turn to the land immediately to the south of us, the figures quoted appear but insignificant. The thirty-three companies reporting to the New York insurance department, are responsible to policy-holders in the enormous sum of nearly six billions of dollars, and pay for medical examination fees a sum not less than two millions of dollars, which does not include the compensation of medical officers and directors, but simply the fees for the examination of applicants.

Such an important part has the physician played in his relation to life insurance, that in the United States there was formed some five or six years ago, a medical directors' association, and some two or three years later, a similar association was organized in England. In the former organization, the chief medical officers of some of our more prominent Canadian Life Insurance Companies are members. The objects of these associations are to obtain increased information and greater unity of opinion regarding medical subjects connected with life insurance. The American society consists only of the life insurance medical directors; but in the English society, both the medical directors and all physicians who are legally qualified are eligible for membership. The plan of the British Association appears to be the better, for, while there are many questions which more particularly concern the executive phase of the medical department of the business, the real utility of these organizations is, and should be, the discussion of all medical subjects in relation to insurance, and the securing as much as possible of uniformity of opinion and practice. This can only be done by a conference, not simply of medical directors, but of both directors and examiners.

The question of professional secrecy is one which is ever and anon brought prominently before the profession and the public. In some countries, for example, France, and in some of the States of the North American Union, the physician is not allowed to divulge information received from his patient in a professional capacity, unless it involves conspiracy against the State or murder. Legal decisions in Britain and her colonies, as well as in some parts of the United States, are not satisfactory or definite, and much is left to the decision of the judge and jury. No one questions the sacredness of married life, and the divulging of information obtained by a physician in his professional capacity would certainly be considered as contrary to all good morals and unbecoming the conduct of a physician and a gentleman. It is to be regretted and severely deprecated that some medical men are over-fond of retailing their professional experiences—some for the mere love of gossip, others from a desire to advertise themselves as something unusual. All such conduct is inexcusable, and I am glad that it is condemned by the majority of the profession, as well as by the more thinking public. It is when a medical man is brought into a court of law that his position is somewhat altered. As I have already intimated, in some countries all professional information is considered sacred, and must not be divulged voluntarily, nor can the physician be compelled to reveal it. From a careful study of cases in Great Britain and other English-speaking countries, I learn the decision of judges in general is to make it compulsory on a medical man to tell under oath, like any other witness, all that he may know, whether his knowledge has been obtained in a medical capacity or otherwise. If, however, the knowledge involves the witness he need not incriminate himself. I think this ruling is of doubtful expediency; its tendency is to disturb the mutual confidence that exists between the patient and the physician—that honourable, sacred feeling so healthful to both parties. There are, I must confess, so many circumstances connected with individual cases that a fixed rule is not always possible. Speech is silver, but silence is gold.

In view of the wonderful discoveries of modern days, especially in reference to mechanical appliances, one should hesitate before pronouncing emphatically against the possibility of almost any discovery. The uses of electricity are so varied and well established that we should not ignore any statement as to its results without investigation. It was only the other day that a message was sent around the civilized world in a space of time not greater than I am occupying in speaking to you now. Electricity has also been recognized as a very important therapeutical agent in the treatment of diseases. One of the most recent discoveries, known as the Roentgen Rays is the skiagraphing or photographing of the shadows of internal parts through dense structures, muscles and bones. This must prove of great assistance in the diagnosing of many diseases hitherto obscure, and must also prove of great service to the surgeon, in locating the presence of bullets, needles, and other substances that have entered the body, as well as in indicating the presence of disease, for example, in case of injuries to the vertebrae, stone in the gall bladder, kidney, and vesical bladder, the position of the fœtus in utero, in fact, gentlemen, I have no doubt but that the uses of the instrument will become most frequent as improvements are made upon it.

I have watched the growth and development of this Association with the deepest interest. I had the privilege and pleasure of being present at its first meeting held in Quebec in 1867. Has it received the support from the various parts of the Dominion to which it is entitled? I don't know that I can say unreservedly, yes; but, I certainly can say that it has ever and always received the most loyal and cordial support of the profession of Montreal. I have no hesitation in telling the honourable and zealous body of physicians and surgeons of this city, that our members from the east and from the west, from the Atlantic and the Pacific, highly appreciate the work you have done in the interests of our national Medical Society, and I think I may take the liberty of offering you the congratulations of the medical profession from the various provinces of our great Dominion, on the honour that has been conferred on Montreal, by the unanimous decision of the Council of the British Medical Association, to hold its next annual meeting in your fair and prosperous city. I also have much pleasure in tendering our congratulations to your distinguished townsman, Dr. Thomas G. Roddick, the President elect.

Many subjects of a scientific nature in the various departments of medicine, will be brought before you, and I know that they will receive your most careful consideration, and I ask you one and all to put forth the most strenuous efforts to make this meeting a pronounced success.

In conclusion, gentlemen, allow me to express the hope that the Canadian Medical Association will continue to extend its usefulness and maintain its high reputation; and, in addition, that we may ere long have a common standard of medical education in Canada, with reciprocity between our different provinces, and also reciprocity between our Dominion and the mother country.

THE ADDRESS IN MEDICINE.

DELIVERED AT THE ANNUAL MEETING OF THE CANADIAN MEDICAL ASSOCIATION, MONTREAL, AUGUST 26TH, 1896.

BY

GEORGE WILKINS, M.D., M.R.C.S., Eng.,
Professor of Medical Jurisprudence and Lecturer on Histology, McGill University,
Physician to the Montreal General Hospital.

GENTLEMEN,

When asked to deliver the address in medicine, naturally I felt quite proud of the honour. At the same time I must confess I was puzzled as to the text I should select for my discourse. In the early part of my professional career, as a young practitioner, with much spare time at my disposal, I was able to undertake experimental physiological and pathological work, which a busy routine practice later on compelled me to abandon. Possibly this may be considered a sufficient excuse for me to-day taking up as the subject of my address, "The modern treatment of some diseases as the result of experimental investigation." Whilst writing these lines, and excusing myself on the grounds of press of work, I cannot help thinking that some of the greatest advances in modern surgery and medicine are due to the investigations of some of our busiest of men.

About this time twenty years ago I had the instructive pleasure of seeing Mr. Lister, now Sir Joseph, astonish his audience by assertions and proof that many surgical conditions were due to the access of germs, and also by demonstrating the freedom with which, under the spray, cavities hitherto considered inaccessible to the surgeon might be invaded consistent with longevity. Since that time enormous strides have been made, both in medicine and surgery, resulting in many innovations in the treatment of disease.

Although in many respects new, they are practically of remote origin. The grand discovery, or rather experiment, of Jenner's just one hundred years ago, cannot yet be fully estimated. When he vaccinated the eight year old boy from the infected hand of a dairy-maid, and subsequently inoculated him with small-pox, he may truly be said to have laid the foundation of microbic pathology, although he knew nothing of microbes. Yet it is extraordinary to note how the centenary year of this grand discovery has been kept in his own town of Gloucester. Here, more than any other place in Her Majesty's dominions, has the anti-vaccination cry been raised, and in consequence during the early part of this year the mortality from smallpox amongst the unvaccinated has been frightful. About the very day, one hundred years later, on which he vaccinated the Phipps boy, we find those who were the most bitter opponents of his teachings, rushing to avail themselves of his precepts by being protected by vaccination.

Although Jenner little thought that micro-organisms played any role in disease, we find that the theory was by no means a new one, for fifty years previously Linnæus had stated that minute organisms were the cause of many diseases. He named amongst others the plague, smallpox, measles, syphilis, dysentery and whooping-cough. Since Jenner's time, others, notably Ehrenberg, described "infusorial animals" which he said were the cause of many diseases affecting man. Ten years subsequently, Sir Henry Holland after studying the life history of the minute organisms seen in water with the microscope, came to the conclusion that many diseases must be due to the presence of orgamsms in the atmosphere which the microscope of the day was unable to demonstrate. The improvement in this instrument and in the preparation of structures for examination has opened up new avenues to knowledge. By these means we have been able to penetrate still deeper into the secrets of the organism, and through its revelations Virchow was able to promulgate the doctrine of cell pathology that has done so much to place the science of medicine on an intelligible basis. Improved methods of staining have enabled us to identify different structures in their minutest ramifications. It has made it possible to distinguish between active protoplasm and the material formed by it, and has revealed essential differences between cells otherwise apparently alike in all respects.

With its aid and working upon the lines commenced by Jenner, Pasteur and his co-workers have thrown much light upon the cause of specific diseases, as well as upon the means of fighting them. Pasteur's discovery and demonstration that the dependence of many diseases is upon the presence of minute organisms may be justly ranked with that of Harvey, both in regard to the far-reaching benefits which it has conferred upon mankind and for the simplicity of its origin. It contributes the most important of all the links yet made between science and therapeutics. It has completely upset the zymotic theory of many diseases, according to which the history and cause of these diseases were comparable to fermentation following the addition of yeast to a saccharine fluid.

Jenner's work was a standing illustration of the attenuation of a virus. It anticipated and pointed the way to the processes by which

Pasteur has attained such sensational results in hydrophobia and which more recent investigators have obtained in snake poison. Possibly we can not have a more striking example of the range of possibility of immunised serum than has been recently afforded by Sewall in cobra poisoning. By gradually increasing the dose of the poison it was found possible by the immunising effects of rabbit serum after a course of five or six months' treatment to render the animal so highly protected that a dose sufficient to kill 370 unprotected animals would be without effect upon the protected animal.

Pasteur's work has been a wonderful example of development as a result of close observation. Although his labours in connection with the process of fermentation are deserving of the highest praise, the results of his investigations as to the cause of disease in the silkworm quite overshadowed all his previous labours in the magnitude of its effects. The silk industry, which was being paralyzed by the miserable little parasite on the mulberry leaf upon which the worms fed, and was thus entailing losses yearly to the extent of several millions of francs, was revived through the result of his researches. Whilst engaged in this work, a yet more extensive field for investigation lay open for him on seeking for the cause of the ravages made by anthrax. Here he had a definite organism which he was able to cultivate in various manners, treat with various reagents and then watch the process of the disease set up by the modified organism. Through the isolation of this bacillus he was able to perform pure experiments, the results of which were not obscured by extraneous factors. His attenuation of the poison by growing the organism in ordinary broth was a master-thought worthy of such a mind.

He was thus able to obtain a protective virus with which millions of sheep in various parts of the world have been inoculated, thus arresting the further progress of a rapidly fatal disease. One of Pasteur's pupils (Marchoux) has been carrying his experiments still further, and finds that the antidotal powers of the serum are greater if it is taken a short time after a fresh dose of the virulent anthrax has been given to the immunized animal. He finds that the best results are obtained if the serum is prepared two or three weeks after the last inoculation.

This plan of protection from infective diseases which was first employed by Jenner in smallpox and subsequently, as just stated, by Pasteur in anthrax, is now being extended to other diseases, and the substances which are formed in the body and their mode of action are now being carefully investigated in various parts of the world.

From the success which has attended these investigations it looks as if in the very near future a great many, if not all the contagious diseases with which we are now afflicted may be as much under human control as smallpox and anthrax are known to be.

The immunity thus afforded by vaccination is only one example of a very similar process that occurs naturally when a healthy woman becomes pregnant with a syphilitic child by a syphilitic father. The interchange of serum that takes place between the placental vessels and the uterine circulation of the mother is that of toxin mixing with normal blood. It is the result of the union of a syphilitic spermatazoon with a healthy ovum, as the result of which, as development proceeds, syphilitic toxins are produced which diffuse into the blood of the mother and she becomes gradually immune. By the time of maturity of the fœtus the mother, in the large majority of cases, is rendered so completely immune that she will not contract the disease by contact of the placental blood with lacerations of the cervix or perineum. She is equally protected from infection though she may have an excoriated and fissured nipple and the little one tug at it with mucous patches and sores on the lips, whilst a healthy wet nurse would at once be infected by such a child.

This state of immunity thus naturally transferred to the mother through the fœtal circulation is what Pasteur conveyed to the sheep by the introduction of a mitigated virus. Behring, however, advanced still further. In 1891 he showed that if immunity to tetanus or diphtheria had been conferred upon animals, their blood or serum was found not only able to protect other animals against either the bacteria or their soluble specific poisons, but even to cure them if injected subsequently to the virulent matter. In the first of these methods the animal forms its own antitoxin; in the second it is previously formed in another animal and transferred as a therapeutic agent. Although this method of treatment was published for the first time in April, 1893, by Behring and Kossel, yet so overwhelmingly great has been the success attending it and the amount of literature published regarding it that it is practically old.

The introduction by them of serum therapeutics marks a distinct epoch in the history of medicine. Although our knowledge of the pathology of disease has greatly increased within the last few years, medical therapeutics was practically at a standstill. The disastrous results of the tuberculin treatment had so shaken the faith of the advanced modern physician, that it required strong evidence in support of the contention of those who introduced the serum treatment, before it could gain their confidence, although the principle rests upon an entirely different basis. This principle has had ample evidences of its reliability, and we have good reason for hopes of its extension to many other diseases than the one in which it is so markedly successful—diphtheria. This principle depends upon the fact that the blood serum of animals highly immunised by artificial means to any bacterial disease, possesses the property of protecting other animals against the same disease, and that this protection is afforded whether the serum is administered before, simultaneously, or after the injection, provided in the latter case that the disease has not advanced too far before the protective injection is made. The principle is one that appears to be applicable to all bacterial diseases. Indeed, the precision with which this principle is worked out in diphtheria, is one of the most remarkable illustrations of the scientific basis of rational medicine. In the whole range of experimental pathology or pharmacology, there is nothing that offers clearer or more striking results than the experiments of Behring and Klein. They quite equal in their results the so-called exact sciences. What can be more positive than that a certain definite dose of pure diphtheria toxin is capable of killing within 36 hours, ten animals of a certain size, and that we are able to procure from various animals a serum artificially prepared, of which 0.1 ccm. will exactly neutralize the previously fatal doses, and thus, when the two are mixed, and animals injected with this mixture, absolutely no effect is produced. This probably is a point that is often overlooked in the use of antitoxin and one that the thermometer will aid us in. In practice the antitoxin should be administered in sufficient doses to completely neutralize the effects of the toxin circulating in the blood.

Notwithstanding our familiarity with this method of treatment it happens not to be entirely devoid of danger. Considerable attention has been directed to that fact by the sudden death, a few months ago, of the healthy child of a Berlin surgeon, after the administration of a dose purely for immunising purposes. In this particular case food was found in the trachea, which fact might or might not be accounted for by artificial respiration that had been attempted. Apart from this, however, other cases have occurred, and given rise to much speculation and theorizing as to their probable cause. On the one side it was thought that the absence of a toxin to be neutralized in the blood might cause such an untoward event, but the rarity of fatal occurrences in very mild cases disproved any such theory. Adamkiewicz performed some experiments which give us useful hints which may be of importance in subcutaneous medications.

He injected air into the veins of a guinea pig. 2 cc., injected rapidly and forcibly will kill at once, whilst 10 cc. may be slowly and gradually injected, with only a few seconds intervals, and the animals suffer no inconvenience.

In some experiments on patients on which "cancroin," a substance obtained from the serum of dogs inoculated with cancer juice, was used, alarming results were produced by rapid and forcible injection, whilst no inconvenience was produced where the same or larger doses were given so as to allow the organism time for adaptation. These experiments seem to point to the fact that the living body is provided with a self-regulating apparatus which protects it against noxious influences within certain limits ; once these are past, the animal is lost

According to his views, and the results of his experiments, any substance, serum included, may have a double noxious action when introduced into the body, proportional to, first, the force with which it is injected, and secondly, the specificity with which it acts upon the blood, or through the blood on other constituents of the body. The virulence appears to increase with the force of the injection.

With respect to diphtheria, we fear it is too frequently the case that unsanitary conditions are regarded as the essential factor in its development. Except in so far as such conditions lower vitality and render those subject to them more vulnerable, such is not the case. In England, where records are well kept, the general death rate due to so-called zymotic diseases has been greatly lowered in consequence of improved sanitary organization and regulations, whereas the death rate in diphtheria has risen. It is obvious that the more thorough and complete are sanitary measures the more is the general standard of health raised ; but that such measures alone can prevent the spread of contagious diseases, which may attack the most robust, is just as certainly untrue. Contagious diseases, of which diphtheria is a prominent example, have to be met by prompt isolation of the sick and measures of disinfection. The explanation of the failure to limit the spread of the disease is no doubt due to the difficulties of diagnosis. These difficulties are due to the various forms which the disease may assume, and the confusion arising from the existence of throat inflammation that simulates the milder types of the specific affection.

The discovery of the specific bacillus by Lœffler, and the proofs of its specificity which we all now know so well through the investigations of many able workers in this branch of medicine have placed in our hand a diagnostic test, the application of which is almost a matter of duty.

The success attending the use of serum-therapy in diphtheria has with renewed vigour, directed the attention of medical scientists to the application of the method to tuberculosis which is so fatal to the human race.

Working on lines somewhat different from those adopted by Koch, Maragliani professes to be able after the lapse of six months' preparatory treatment to procure from the horse a serum which possesses antitoxic qualities so far as tuberculosis is concerned. According to his results, 1 c. c. of the antitoxic serum will easily neutralize what would be a rapidly fatal dose of tuberculosis in a fair sized guinea pig.

Other Italian observers have been working with perfectly normal serum from a healthy horse, and report that injections of from 3 to 5 c. c. of this serum injected into children act powerfully as a tonic, causing in every case increase of corpuscles and gain in weight. Several cases of chorea were treated in this way, and on an average were cured in 15 days.

As is well known, and also as might be expected, serum-therapy has been applied to the treatment of many other diseases, and apparently with some measure of success. In the absence of personal experience, I may be permitted to relate what has been done without endorsing this mode of treatment.

Natually a disease that is so prevalent as typhoid fever would come in for a good share of attention in this direction. Quite recently we read in a communication to the Société de Biologie that the writer had succeeded in immunizing several horses against this virus. He had obtained the serum of such strength, that one-fifth of a drop inoculated into a guinea pig 24 hours before injection protected it against a dose of typhoid virus, fatal to animals not previously injected with the protection serum. It was ascertained also that injections of the serum produced no injurious effects upon a healthy man. The author stated that he had since employed injections of serum in three cases of typhoid fever. The temperature showed a regular fall from the time the first injection was made, and seven days after the commencement of the injection, all three patients were quite free from fever and had commenced to convalesce.

That the serum of a typhoid patient has a specific effect, seems to be proven by a communication made to the Academy of Medicine last month by Dieulafoy. By the addition of a drop of the serum from the blood taken from the finger of a typhoid patient to a few drops of a culture of Eberth's bacillus, under the microscope the bacilli can be seen to stick together, forming islets, with well marked clear spaces between them, whereas if the serum is taken from a healthy person or from one with tuberculosis, nephritis, rheumatism, or any of the diseases which might have been mistaken for typhoid, the bacilli of the culture are isolated and motile

Pneumonia also has had its share of attention. Numerous experiments have been made upon animals and several attempts have been made to treat patients in the same manner. According to Emmerich serum from immunised animals can cure pneumo-coccus infections in rabbits and mice. Klemperer reports several cases of pneumonia having been treated with the serum of rabbits thus rendered artificially immune. In all the cases so far reported, each time the serum was injected there was a diminution in the height of the temperature and in the frequency of the pulse and respiration and the patients all made a good recovery. Again, in other cases, patients inoculated with the serum of those suffering from pneumouia obtained immediately after the crisis, at once commenced to improve, the temperature becoming lower and defervescence as a rule at once following.

Streptococcus serum is a substance about which there is much diversity of opinion as to its value and uses. Virulent cultures of erysipelas streptococcus have been able to antagonise the evil effects of the inoculation of animals with anthrax virus. Rabbits inoculated by Emmerich with this virus were cured by the injection of the streptococci cultures whilst those in which no streptococci were used died. The serum, freed by filtration or otherwise from the streptococci, had an equally good although not an equally rapid effect.

Quite recently we read of this same fluid, but prepared from the ass, as being used with decidedly beneficial effect in pyogenic affections, in which it has had the credit of saving some valuable lives.

This serum, as now prepared, differs very materially from that used for diphtheria antitoxin. In the latter case, it is the toxins formed by diphtheria bacilli in bouillon cultures which are employed to set up immunity in animals furnishing the serum The anti-streptococcus serum is obtained from the blood of an ass which has received during several months repeated and increasing injections of living virulent streptococci. Before use for clinical purposes, the serum is filtered through porcelain which removes all microbes. Some cases have been reported by most reliable authorities of its use in suppurative peritonitis and also in cellulitis following punctured wounds made during the post-mortem examinations of such cases, in which the prognosis would otherwise have been unfavourable.

Acute septicæmia or pyæmia from any cause are amongst the other affections from which we may hope to get good effects by its use.

Many cases have been published giving a decidedly favourable report of the result of this mode of treatment. On both the European and American continents the serum of the horse seems to be most used for this purpose but it requires about one year's preparation to obtain a sufficiently powerful antitoxin. By that time the serum of the horse may have a preventive power of 1 to 30,000. Its administration will cut short a septicaemia already in evolution, or at least render it chronic so that the localisation of the septic processes will permit the organism to overcome the affection.

In tetanus the effects of antitoxin are little short of marvellous. Minute doses injected into animals will completely neutralize fatal doses of the tetanus toxin when injected eight or twelve hours afterwards. From reports of cases already published, the antitoxin treatment would seem to be the one which gives the best hope of cure although, not quite as successful as the corresponding treatment for diphtheria. The explanation appears to be that tetanus is rarely recognised as such until a late stage when the toxins are circulating in the blood.

Serum-therapy has doubtless a great future, but care is required that the causation of disease is not lost sight of in the eager hunt for cure and the enthusiasm with which each newly discovered antidote is hailed. The powerful toxic action of the substances produced by the microbes has now for many years been well recognized. But whilst the inert albumen through the influence of their organisms may give rise to albumoses having a powerful toxic action, antidotes are also formed. These when cultivated without the body, and introduced into the living organism, give rise to the production of these antidotes in still greater quantity.

The introduction of either the pathogenic microbe or of toxic products appears to incite in the body a process of tissue change, by which antitoxins are produced, and these may be employed either for the purpose of protection or cure. By their use diphtheria and tetanus are deprived of much of their terrible power.

In using the term serum-therapy, it is to be remembered that there are some infectious diseases in which bacteria have not yet been found. Some of the diseases in which the subject of artificial immunity has been studied by Pasteur, are diseases in which no bacterial parasite has been forthcoming.

The subject of auto-intoxication is necessarily one of great importance to the physician. It is by no means new, but as the result of experimental investigations of late years it is applicable to an extensive range of diseases, and may have its source in variable places, such as the alimentary canal, the respiratory tract, the muscles, etc.; as examples of the former I may mention diseases such as migraine, tetany, gout, etc., whilst cyanosis, and severe cerebral symptoms may have their origin in poisons from the respiratory tract.

The physiologist, through his more intimate knowledge of the functions of organs gained from his experimental work, is able, in many cases, to scientifically direct our energies as to the causes of diseased symptoms and very frequently to supply the remedy. Glands, whose functions up to recent time were supposed to be very limited are now shown to have a much more complicated purpose to serve. As examples, I may quote the liver, thyroid gland, supra-renal capsules, pancreas. That the liver for example must have other functions than those allotted to it by our text books is proven by the fact that animals inoculated by having bacterial poisons injected into the portal vein, die much less rapidly than when injected into the jugular vein, but with exactly the same symptoms. This would seem to point to the fact that the liver does elaborate certain poisons brought to it in quite the same manner that lymph glands elaborate or destroy products brought to them. Chemical and experimental evidences seem to support this view.

The sudden intoxication following the passage of a choleraic stool would be a clinical example of this view, the poison evidently reaching the liver by way of the intestine. The condition may be regarded as of a fermentative nature, the ferment leading to the production of an intensely powerful toxin. The subject of internal secretion recently brought into notice and now being worked up by Schafer and Oliver, more especially with reference to the pancreas is likely to have an important bearing on our views as to the action of many medicines. In the case of purgatives and diaphoretics for example, we have looked mainly at the secretions poured out after their administration, whereas it may be that the main point of the benefit that they produce is not by the substances liberated through the secretions they cause but returned from the intestine and skin into the circulating blood.

How important an effect, the excessive admixture of the juices from one part of the animal body with the circulating fluid might have, has been many times demonstrated in the action of thyroid juice. A few drops injected into the blood of a small animal will kill it as quickly as a rifle ball owing to its action in causing coagulation of the blood. That these glands are important to our well-being and in some cases to our existence has been proven many times; it is still but an unsettled point whether toxic effects are produced through a something accumulating in the blood which it is the gland's duty to get rid of. The weight of scientific evidence certainly points to the probability that the function of many of these glands is secretory rather than excretory; that they form something which is distributed either to the muscles or nerves or other histological elements which is essential to their normal tone and which modifies everywhere protoplasmic movements, and which in removal of the gland produces toxic effects by the removal of the internal secretion. Whilst powerful for harm in this way these secretions are equally powerful for good when administered internally. Although there may be, and in fact there is, as yet doubt as to the utility of the juices or extracts of some glands there is none whatever as to that of the thyroid. Few histories are more interesting than that of the successive steps by which its extract was ascertained to cure myxœdema, beginning with the observation that cretinism was associated with goitre and that the essential feature of this affection, myxœdema, could be induced by extirpation of the gland. Upon this, experiment showed that the cause was not the accumulation in the blood of some substance which ought to have been withdrawn from it by the gland but the absence of some material which the gland supplied.

Some very recent investigations have done much in support of this view of internal secretion. The result has been to prove conclusively that the active ingredient in producing the beneficial effects is the colloid contents of the cell spaces. It has been isolated in a state of purity and shown amongst other peculiarities to contain a considerable quantity of iodine in organic combination. The other proteid contents of the gland substance have been shown to be inactive. The therapeutical value of the various preparations of the gland in myxœdema, lupus and cretinism is one of the most important and remarkable therapeutical discoveries of modern times, and at times savours of the miraculous. Many of the cases are actually snatched from a life of unloveliness and suffering and restored to health and vigour. In many other affections such as psoriasis, ichthyosis, obesity, and goitre it has proved serviceable. Its efficacy now requires no further proof; so many illustrations and reports of cases have been published showing at a glance the condition of the same patient both before and after its administration, that the subject is in some degree becoming stale and tiresome. But there are many clinical observations which can be made on patients during the early period of treatment which are of interest and importance. Its forms of administration are of no small importance. It has been given subcutaneously, and in the form of raw gland, the fluid extract and the dried extract. The consensus of opinion is in favor of the dried extract which does not appear to deteriorate by keeping.

No matter in what form administered it requires caution in its administration, especially in the commencement of the treatment, on account of the great differences in the susceptibility met with in different people.

Death has occurred from syncope during its use, to avoid which, during the use of the remedy, cardiac stimulants and tonics are required and should be given.

That the ingestion of the gland has a powerful effect is now being almost daily demonstrated. Large doses of fresh thyroid cause a rapid increase of the pulse rate, with a rise, followed by a fall, of blood pressure. It nearly always causes emaciation, hence its utility in obesity, just referred to. In some animals it has caused paresis of the lower extremities. The mental condition is materially altered. hence its use with marked beneficial effect in some cases of insanity. A fact of importance in human pathology is that over-feeding pregnant animals with thyroid preparation, produces symptoms of thyroidism, such as I have just described, in the young. It has been suggested that some of these symptoms might be due to meat poisoning, as fresh glands are not as toxic as the various preparations.

Brown-Sequard's recommendation of the use of testicular extract a few years ago, for which he promised such wonderful results, whilst sadly disappointing to many others, more so probably than to its promoter, has certainly been the means of directing the attention of scientists to the employment of the extract of other organs in the treatment of disease.

Just now the supra-renals are claiming a great deal of attention both from the physiologist and the practical physician. That their removal is invariably followed by death is well known, but the purpose they serve has not been definitely made out. The blood of animals from which they have been removed produces toxic effects similar to those of veratrine. Injecting an extract of the capsules causes an enormous rise in blood pressure, but the supra-renals in cases of Addison's disease have no such poisonous effect.

The practical use of this and many other animal extracts is still *sub-judice*.

Pasteur's treatment of rabies, by which the death rate has been brought down to 1 per cent., has given us some reason for hope that other nervous affections may be cured by some of the animal extracts. In neuræsthenia, tabes, and in some forms of epilepsy, brain extracts have been used with reported success. In pseudo-hypertrophic paralysis the juice of the thymus gland has been tried. Anæmia, debility, and lymph-adenoma have all had their share of experimentation with bone marrow. Although the success attending the use of many of these extracts so far does not, in my opinion, justify us in relying upon them for success in treatment, it has opened up a new line of thought both in physiology and therapeutics. The methods of experimentation that are now being pursued and their application to practical medicine will no doubt lead to a better classification of disease and to the generalisation of many marked phenomena that hitherto have been absolutely unrelated.

The short synopsis I have already given of some only of the experimental work done in medicine shows that it is rapidly increasing the grounds for its claims to be a true science. Like all other sciences the observations that are made are capable of verification. Many of the laws that have been established by observation are now capable, by comparison and classification, of being generalised and verified with as much exactness as astronomy or mathematics. When Hippocrates, over 400 years before the Christian era, by his clinical study of disease declared that no one disease was more divine or human than another, and that none arose without a natural cause, he laid the foundation of rational medicine. Although he knew neither anatomy nor physiology, nor had the results of experimental work to act upon, through his close observation as to the symptoms of disease, he was able to generalize, and, as a result, to prove that both priestcraft and philosophy were powerless in disease. The angry gods of Hippocrates' times can now be grown and cultivated on agar or nutritive bouillon gelatine, or in the serum of an ass, and their anger may be appeased by the serum of a horse cultivated by a Roux, or Pasteur, or Klein, and administered by an iconoclast.

It was in following the Hippocratic method of close observation of clinical facts and their verification that Jenner has been such a benefactor to the human race. Long before his well-known experiment, it was common " folk lore" around his native town, especially amongst the milkmaids, that whilst smallpox raged around them they were free from the disease, at least those of them who had contracted cowpox in their daily avocation. For years Jenner studied those cases, and then came his noted experiment of 1796.

Now, one hundred years later, we are in the midst of researches which, under new methods and aids, promise great results. The summit has not yet been reached.

As Nasmyth, the great engineer, said, the greatest progress in his work was owing to the introduction of a new tool or the perfecting of some older one, which might be used either for welding iron or boring a tunnel. What position would scientific medicine be in now were it not for the advances in microscopy ? The grandest discovery of the present century is due to it.

The artizan sitting at his bench grinding his lens and the chemist in his laboratory are equally advancing our noble science with their improved methods.

When the astronomer thought his telescope had reached its limits of power, new means of investigation shed light on hitherto unobserved facts. By means of the photographic camera and the spectroscope, a new impulse was at once given to the science of astronomy. In our science the practical application of these means of observation places it in advance of the other sciences. Even if interrupted at times by speculative hypotheses, it goes steadily onward. The success in treatment which has already resulted from the researches of our scientific *confrères* proves that where the greatest difficulties are to be overcome, success meets with the greatest reward. Those, therefore, who wish to penetrate into nature's secrets must be prepared not to turn back at some apparently insuperable obstacle, but to advance steadily until thoroughly satisfied that there is no path in the way sought for.

THE ADDRESS IN SURGERY.

DELIVERED AT THE 29TH ANNUAL MEETING OF THE CANADIAN MEDICAL ASSOCIATION HELD IN MONTREAL, AUG. 27TH, 1896.

BY

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In considering this era of many books when in our own territory the intellectual atmosphere is really obscured by the perpetual precipitation of what we are pleased to call literary matter, one is struck by the fact that the man who has done the most important work of the era, the man whose work is the inspiration of a large part of this surgical literature, has never written a book. The published writings of Sir Joseph Lister exist only in scattered papers in the pages of various medical and scientific journals. They might all be collected in one small octavo volume. But I will venture to say that octavo volume would contain more of the marrow of surgery than many bulky treatises. It would indeed, I believe, be found to throw a clearer light on the great problems of medical science in general, than any single volume that can be named.

The enormous practical importance of the work Lister has done in establishing antiseptic surgery has, I cannot help thinking, overshadowed to some extent the equally great importance of his earlier work on pathology. Equal importance, I say advisedly, for the pathological principles acquired in his earlier work prepared the way for the acceptance of the Germ Theory and gave it a rational basis to work on. A practice founded on isolated data, a purely empirical practice with no definite homogeneous pathological groundwork, must be unsatisfactory, unmanageable, even at times dangerous. One cannot have a better example of this than the history of venesection.

It is my purpose in this short paper to draw attention to some of the cardinal points in the teaching of Lister. And first I shall speak of his work on the essential nature of inflammation, as I consider it gives the key-note of all his teaching. It would be impossible to overestimate the importance of these researches. They occupied him for several years, and the results are published in the Transactions of the Royal Society for 1858. They may be called the Principia of Surgical Pathology. This work removed many erroneous impressions as to the nature of the inflammatory process; it proved the correctness of many of the surmises arrived at by the marvellous genius of John Hunter, but replaced his definition of inflammation by an entirely different one and gave us a new idea of the subject. And some of the most interesting facts in physiology and pathology were for the first time discovered and demonstrated.

At the time when he began his work the question of the nature of inflammation was in a most unsettled condition. All sorts of theories were held about it, and there was little but theory. But the subject was being eagerly investigated. Many influences, a consideration of which may not detain us now, had combined to awaken a spirit of research into vital phenomena, and experimental pathology and microscopic analysis were being brought to bear on what may truly be called, this burning question. The web of the frog's foot and the membranous wing of the bat were, on account of their transparency, the favorite subjects of study.

It was well known that the application of an irritant to the web of the frog's foot resulted in changes in the calibre of the blood vessels and the abnormal accumulation in them of blood corpuscles. Lister set himself to discover whether these phenomena were related to each other as cause and effect. The Astley Cooper prize had just been awarded to Wharton Jones for an essay in which he contended that the stagnation of the blood was due to a contraction of the arteries, It occurred to Lister that if a mild irritant were employed one might get "the alteration in the blood vessels without the concomitant alteration in the blood," and he experimented with warm water. As a result of his experiments he arrived at the conclusion that "the arteries regulate by their contractility the amount of blood transmitted in a given time through the capillaries, but neither full dilatation, extreme constriction, nor any intermediate state is capable *per se* of producing accumulation of corpuscles in the latter." His next step was by a series of most ingenious experiments, which it is impossible to describe in the limits of this paper, to establish the fact that inflammation "may be brought about in two totally distinct ways, viz., either by the direct operation of a noxious agent upon the tissues or indirectly through the medium of the nervous system."

Then, from a study of the phenomena observed in the affected tissue he arrived at an explanation of the essential changes underlying these phenomena. As this was the earliest exposition of the modern doctrine of inflammation we may consider it in some detail. A strong inference may be drawn from the following experiment. A frog was placed in a jar of water strongly charged with carbonic acid. When the limbs had ceased to act it was withdrawn. It was found, though the heart was still beating, the blood-vessels were loaded with stagnating blood. After a time the frog regained consciousness and resolution occurred in the vessels. We may infer that the carbonic acid, poisoning the web as well as the brain, paralyzes for a time the functional activity of both, and that the return of circulation, like the recovery of cerebral functions, depends on the restoration of the dormant faculties of the affected tissues. The same conclusions are present in cases of galvanic shock.

Then, the condition of the blood corpuscles in the inflamed part is suggestive. In healthy frog's blood, the corpuscles have no tendency to adhere; in the inflamed web they adhere to each other and to the wall of the vessel as they do in shed blood. If the blood, then, passing through the vessels of an inflamed part behaves as it does when let out of the body and in contact with dead matter, the inference is, that the tissues of this part are more like dead matter than living—that their vitality is at a low ebb. A consideration also of the nature of the agents acting as irritants would lead to the same conclusions. All of these irritants, chemical, thermal, mechanical, electrical, are such, that if applied sufficiently strongly, or for a long enough time, they will kill the tissues.

But direct evidence on the question was obtained from an unexpected quarter. While examining a frog's web, in which he had induced inflammation by a grain of mustard, Lister observed to his astonishment, that, in addition to the usual appearances of inflammation in the irritated part, the pigment cells in this area had a totally different appearance from what they had elsewhere. This observation opened up a new path for investigation and led to most important results. It had long been known that changes occurred in the colour of the frog similar to, though not so marked as, those of the chameleon. It was also known that the pigment was situated in certain cells of the skin, and German investigators had concluded that the changes in shade from light to dark were caused by contractile changes in the protoplasm of these chromatophorous cells. But Lister showed that the change was not due to a change of shape in the cell but to variations in the distribution of the pigment. He showed that the cells were branching cells, the processes of which subdivided and anastomosed so as to form a reticular meshwork in the skin. When the skin of the frog is pale, the pigment granules are aggregated in a small black mass around the nucleus, the branches of the cell being seen with difficulty. Where the skin is dark, the pigment granules are scattered throughout the protoplasm, being more closely packed in the smaller branches, until finally they come in contact and give the appearance of fine dark lines. And there are intermediate conditions corresponding to the hue of the frog. If the frog is exposed to light, it becomes pale, if secluded from the light, it becomes dark. How is the change brought about? Is it a direct action of sunlight on the skin, or is it reflex, through the eye? Lister decided this in a simple way, he blindfolded the frog, made a little hood, or jacket for it, leaving only an opening for air, and now found that, whether exposed to light or not, the dark colour was permanent. This proved that the movement, or, at least, that the concentration of pigment, was a reflex change, through the eye and similar to the contraction of the pupil. Before this experiment, there was no evidence that any function but that of muscular contraction was under the influence of the nervous system. Further experiment showed that the spinal cord held the same relation to the concentration of the pigment granules as to the contractility of the arterial musculature. Division of the sciatic nerve, or of the spinal cord was followed, in the one case, by relaxation of the arteries; in the other, by diffusion of the pigment granules and the corresponding darkening of the skin. But in time, contractility and concentration returned. Transverse segments could be removed from the spinal cord with the same result. After a longer or shorter time, there was a restoration of the suspended function. But when the whole spinal cord had been cut away the nervous control of these functions was lost and permanent relaxation and diffusion resulted.

And the direct action of the irritant on the pigment cells was shown to be distinctly of the nature of a paralysis or arrest of function. In the inflamed spot on the frog's web, the pigment is in an immovable condition. If a frog of medium colour has been the subject of experiment and if we place it in a white basin and expose it to light it soon becomes pale, but the irritated spot remains dark. If, on the other hand, we cover it in a jar and exclude it from light it becomes dark, but the irritated spot appears pale by contrast. Power of concentration as well as power of diffusion is lost.

The same results were obtained when the experiment was varied by acting on a portion of the web entirely removed from the foot so that the influence of the nervous and circulatory systems were eliminated. This is absolute evidence that this particular form of tissue loses its power of action when an irritant has acted sufficiently long upon it. It has not been destroyed; after a time its power returns. If the irritant has been too powerful or continued for too long a time, the tissue may lose its properties permanently, it may die.

Similar results were also obtained in a series of most interesting experiments upon ciliated cells.

And so, from the behaviour of the blood in an irritated, that is, an inflamed part, from a consideration of the nature of irritants, and of the behaviour of the tissues when irritated, "we are drawn to the inevitable inference that the occurrence of inflammatory congestion in a part, indicates an enfeebled state of the tissues bordering more or less closely on death, and if continued, leads to death."

These experiments showed that the phenomena of inflammation could be induced in tissues entirely cut off from the influence of the nervous or circulatory system. This is proof that the tissues possessed life in themselves. Again, when the irritation was removed, inflammation passed off, therefore the tissues possessed inherent powers of recovery. This idea of the inherent vitality of the cell, the self-preserving power of the tissues, is a favourite one in Lister's teaching. One of his earliest contributions to surgical literature is a note of a case in which, on account of secondary hæmorrhage, a tourniquet had been applied to the arm so as completely to stop the circulation in it, and had so remained for thirty hours before he was called in to amputate. The arm was of course swollen, cold and discoloured, but encouraged by the results of the observations he was then carrying out on this subject of the vitality of the tissues, he decided to tie the brachial and give the arm a chance, and with complete success.

And blood is a tissue in which the phenomena of depressed function and renewed vigour may be seen, and which has an inherent power of resisting noxious agents. And this not only in its fluid state. Coagulation does not necessarily imply death of the blood. Lister showed in a series of most remarkable experiments that blood in its normal condition has no tendency to coagulate. In most text-books of physiology Brücke's theory of coagulation is adopted, namely, that coagulation is prevented by the peculiar action of the blood vessels· But we cannot prevent a tendency unless the tendency be there to prevent. The vascular parietes exert no special action on the blood, they simply continue to live and to hold their normal relations to the blood. We have as much right to say that the blood exerts a peculiar influence on the walls of the blood-vessels to prevent their degenerating. What is it that induces coagulation? Contact with dead, or rather with non-living solid matter. Now take the case of a wounded vein. There is, of necessity, a clot in the wound. But this clot does not extend, the blood flowing over it does not coagulate upon it, the blood-clot does not induce coagulation, therefore it is living tissue. Later on, when antiseptic surgery enabled him to study the whole subject under new conditions, Lister was able to prove the truth of theories he had been led to form as to the behaviour of blood-clot in a wound. I find in some text-books references to Schede's method of utilising blood-clot in wounds and, if I mistake not, I have read of Halstead's blood-clot, but I do not find that blood-clot behaves differently in Hamburg or Baltimore from what it did in the Royal Infirmary of Edinburgh a quarter of a century ago, when one of Lister's favourite demonstrations was the vascularisation of blood-clot and epithelial growth upon it. Some of you will remember Hunter's famous case in which he believed organisation had taken place in a blood-clot in the tunica vaginalis.

These principles explained healing by first intention. The tissues irritated by the passage of the knife, present the early stages of inflammation, dilatation of vessels, stasis of blood, effusion of liquor sanguinis and corpuscles which glue the sides of the wound together and in which organization at once sets in. In such a wound, it may be that none of the cardinal signs of inflammation show themselves. And the germ theory explained the too frequent failure of this method of union. The initial cause of irritation had passed away, but septic germs had gained access to the wound and led to a persistent irritation, directly, by their poisonous action on the tissues; indirectly causing reflex irritation through the nervous system.

In the same way granulation tissue was shown to have no tendency to suppurate unless irritated. The bearing of this upon the treatment of ulcer is evident. Remove the irritation and the tendency to suppuration ceases. When granulations are covered over by epithelium, their structure is not changed, but external agencies are excluded and no more pus is formed. Also, when two granulating surfaces are brought together, they cease to form pus. Each protects the other from irritation. Then, too, when antiseptic surgery began, and it was shown that some antiseptic agent was necessary to purify the skin, the hands, the instruments, Lister showed that the less the antiseptic, with its unavoidable irritation, acted on the wound, the better. Twenty-five years ago, when the most extravagant ideas were abroad as to antiseptic treatment, when wounds were being pickled in antiseptics, and abscess cavities were being over distended with carbolic acid, these were Lister's words, "The injured tissues do "not need to be stimulated or treated with any mysterious 'specific': "ALL THAT THEY NEED IS TO BE LET ALONE. Nature will then take "care of them: those which are weakened will recover and those which "have been deprived of vitality by the injury, will serve as pabulum "for their living neighbours." This is the watch-word of Lister's whole system of treatment. Remove the obstacle to healing: relieve irritation, assist Nature. The most potent and frequent hindrance to the healing process was septic infection, and naturally engrossed the largest amount of attention, but this principle underlies Lister's work in all directions.

In the quotation just given, we have the first indication of a new principle: "pabulum for their living neighbours." That which struck Lister most in the study of granulation tissue under the new conditions of antiseptic surgery was its power of absorbing dead tissue as sloughs and necrosed bone. It was generally supposed that matter had to be in a state of solution before it could be absorbed. Lister showed this was not necessary. He pointed out that the granulations ate the dead bone, "nibbling" was the word he used in describing the process. And this observation led to the successful reintroduction of animal ligature. Many of these observations, for example, the specific action of living tissues, the germicidal action of the blood, and even of the white corpuscles, and this "nibbling" of dead substances by the cells of granulation tissue, were forerunners of the modern doctrine of phagocytosis. Lister laid stress on the fact that a granulating surface was a non-absorbing surface, and that a wound was safer from infection when once covered by granulations, and spoke of the granulating surface as a "living plaster," or protective. Metchnikoff's theory explains this by assuming that the amœboid cells of the granulating surface are capable of coping with the micro-organisms which find their way to it.

We can see that the trend of Lister's thought was much influenced by the teaching of John Hunter. To one of these lines of thought I will now refer, and that is the influence of the nervous system in pathological processes, what Hunter spoke of as "sympathy." We have just seen the importance which Lister attached to the action of the nervous system in inflammation. While he proved that inflammation might occur independently of the central nervous system, he held that in ordinary circumstances it played a very important part in the process, and he believed with Hunter, that in such events as pneumonia, following upon chill, or the sudden congestion occurring in the kidneys after the passing of a bougie into the bladder, we had proofs of inflammation brought about reflexly through the nervous system.

Hunter pointed to the good effects of bleeding from the temples in iritis, and similar things as an example of this sympathy, or what he sometimes called "textural contiguity." He also pointed to the general contraction of the arteries occuring in venesection. And Lister observed that the reduction of pressure in the veins resulting from the action of gravity, as in an elevated arm, led to reflex contraction of the arteries and local anæmia, and long before Esmarch described his bloodless method, Lister had turned this observation to advantage, and by simply elevating the limb and then applying a tourniquet, secured absolute anæmia, in the part to be operated upon.

Early in the history of antiseptic surgery, Lister, in treating of suppuration, considered it due to two causes, that is, that the abnormal stimulus of the tissues which led to suppuration might be excited through the action of the nervous system, or the direct action of stimulating salts, and sub-divided the latter into putrefactive stimulation from bacterial products and the irritative action of antiseptics themselves. This was before Ogston's work and when the science of bacteriology was in its infancy. It would appear now that the aphorism of Weigert must hold, and that without micro-organisms we can have no suppuration. But the question has two sides, there is the soil and the seed, and the deterioration of tissue which makes it a fit soil for the growth of germs may be brought about by altered nervous action. But if this doctrine of suppuration is pushed further, and all inflammation, as some pathologists would have us believe, is micro-organismal, if this is the orthodox faith I cheerfully confess myself a heretic, for I cannot understand why the products of bacterial life should have a monopoly of inflammatory power.

One of Lister's favorite instances of this action of the nervous system was the practice of counter-irritation whether by blisters, or in acupuncture, or in the use of the actual cautery. It has been said that in the light of modern pathology counter-irritation is an exploded theory and an obsolete practice. I should be sorry to think so. Counter-irritation, like venesection may have been unwisely used, but the fact remains, that it is one of our most powerful and trustworthy methods of treatment.

As much as twenty years ago it was Lister's practice, in early cases of gelatinous degeneration of the knee-joint, with perhaps effusion, to make free incisions through the infiltrated tissues into the joint, and this was in a certain proportion of cases followed by very satisfactory results. We know now that this disease was tuberculous, an infective inflammation. I believe the explanation of these cures to be that partly as a result of the relief of tension, partly as a consequence of the counter-irritation caused by the open wounds, reflex nutritional changes were set up which improved the vitality of the tissues and enabled them to cope with the tubercle bacilli.

Gentlemen, I have perhaps tried to cover too much ground in the time at my disposal. But there are two or three things suggested by this survey of Lister's doctrines to which I would like to draw attention. First, we see the supreme importance of a thorough training in the branches of knowledge on which scientific surgery is based. It was his training in chemistry and physics and his remarkable, we may almost say unrivalled, skill in microscopic technique which enabled Lister to carry out these researches.

Again, I wish to point out that Lister's teaching is to a very great extent clinical and practical. There is not one of the principles which we have been considering which is not capable of demonstration at the bed-side, or, at least, for which strong inferences may not be drawn from the facts of our daily work.

Lastly, I must refer to the spirit in which Lister works. On the one hand, devotion to the good of his fellowmen, the best interests of the patients committed to his care, on the other, a reverent attitude towards the Eternal Power who manifests Himself in these mysteries of life. It appears to me that in his habits of observation, his methods of study, and, fortunately for humanity, in the general result of his work, we have a fine illustration of the thought of an ancient Eastern poet who has said:

> "Devoutly look, and naught but wonders shall pass by thee,
> Devoutly read, and then all books shall edify thee,
> Devoutly speak, and men devoutly listen to thee,
> Devoutly act, and then the strength of God acts through thee."

Original Communications.

THE INFLUENCE OF MITRAL LESION ON THE EXISTENCE OF PULMONARY TUBERCULOSIS.

BY

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The relationship of valvular lesions of the heart to pulmonary tuberculosis has from time to time engaged the attention of clinicians since the days of Laennec. Louis, in his "Researches on Phthisis" (page 48, Sydenham Society edition), states that in 111 autopsies made on patients who died of phthisis, three only exhibited any obvious enlargement of the heart. The enlargement was in the left ventricle, but the condition of the valves is not mentioned.

Rokitansky, who was a strong believer in the antagonisms of certain diseases, made the statement that "persons labouring under enlargement of the heart, dilatation, hypertrophy, and their complications, whether primary or superinduced by mechanical obstruction at the orifice, do not contract tuberculosis." The same author has further stated that heart disease and tuberculosis do not go together, and that all cyanosis, or rather all forms of disease of the heart, vessels, or lungs, inducing cyanosis of various kinds and degrees, are incompatible with tuberculosis, against which cyanosis offers a complete protection. (Dr. Percy Kidd, St. Bartholomew Hospital Reports.) These conclusions, like so many others of such a general character, have been much modified by subsequent observations.

Traube held the opinion that in an engorged state of the lungs pneumonia did not become caseous. In 1864, he stated that he had frequently found pulmonary tuberculosis present in patients suffering from aortic disease, but that he had never met it in connection with mitral lesions.

Peacock (Malformation of the Heart, 2nd ed., page 189), gives a case of pulmonary stenosis, in which pulmonary tuberculosis was present, and remarks: "It is possible that the various conditions may, as supposed by Laennec, be in some degree opposed to the occurrence of tubercular affections, but the opposition certainly in no degree amounts to an incompatibility, as asserted by Rokitansky."

Dr. Pollock states that disease of the heart, whether in the walls or

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[1] Read before the Canadian Medical Association at Montreal, August, 1896.

valves, is by no means an infrequent complication of phthisis. He was also of the opinion that hypertrophy and dilatation of the heart retarded the progress of tuberculosis. In his experience no history of rheumatism was obtainable in a considerable proportion of cases. The reason for this will be explained further on.

Lebert points out that the frequency of tuberculosis in congenital heart lesions arises from the fact that the latter are those of pulmonary stenosis. Phthisis was present in one-third of all the cases of stenosis of the pulmonary valves.

Ruhle claimed heart disease among those antagonistic to phthisis, and the combination was less uncommon in aortic than in mitral disease.

Fagge, Vol. I., says mitral stenosis is an almost complete barrier to the development of phthisis, the post-mortem records of Guy's supplying only four cases of their association in the last thirty years.

I shall endeavour to lay before you our present knowledge of the effects of valvular heart disease on the existence of pulmonary tuberculosis as I have been able to collect it from various sources in medical literature, and shall then refer more particularly to mitral disease.

In this paper the study of primary valvular lesions, such as arise from rheumatism and other diseases in youth shall occupy our attention, and little reference will be made to those conditions of the heart which are secondary to pulmonary disease.

One of the most satisfactory series of statistics has been given by Bernard Schultze in a report of the Pathological Institute of Kiel. Out of 6,935 sections in 484 heart lesions were found, and of the latter 109 were combined with pulmonary tuberculosis; endocarditis alone 80, valvular disease alone 20, endocarditis and valvular disease 9. Of the 89 cases of endocarditis, in 67 the disease was recent and in 22 cases old. Considering all the cases, there occurred mitral lesions with tuberculosis in 4.76 per cent.

	Per cent.
Aortic lesions with tuberculosis in..	15.4
Tricuspid “ “	12.8
Pulmonary “ “	83.3

The small percentage of cases of mitral lesions, occurring with tuberculosis, must be here noted compared with other forms of valvular disease, especially those of the pulmonary orifice.

With reference to the special nature of the lesion in the 484 cases:

	Per cent.
Mitral insufficiency occurred in............	7.4
Aortic “	6.82
Tricuspid “	14.63
Mitral stenosis..................	12.2
Aortic “	19.05
Pulmonary stenosis.......................	83.3

In five out of the six cases of pulmonary stenosis tuberculosis was also found. From these figures it will be seen that pulmonary tuberculosis occurs more frequently with mitral stenosis than with mitral insufficiency. This is also shown by most of the series of statistics which I have examined. In my own experience I have met with two case of mitral stenosis, primary in character, combined with pulmonary tuberculosis, and not a single case of primary mitral insufficiency. I have in two or three cases noted a mitral systolic murmur which I thought was due to changes in the heart secondary to tuberculosis.

In the statistics of the Kiel Pathological Institute, which we are now considering, in 67 of the 109 cases of organic heart disease combined with tuberculosis, there were evidences of recent disease, so that in only 42 could it be positively stated that the cardiac disease preceded the pulmonary tuberculosis.

Dr. Percy Kidd, in the St. Bartholomew Hospital Reports, mentions 26 cases observed during life and 27 post-mortems, in which valvular disease was combined with tuberculosis. The latter 27 cases occurred in 500 autopsies made on tubercular subjects. Of the 26 cases observed during life, complicated mitral stenosis was found in two and combined with aortic lesions in one case. Symptoms of mitral insufficiency were present in six or seven cases, but in almost every one, lesions of other valves were present, or the disease appeared to be of recent date. In only one case of simple insufficiency could the conclusion be drawn that the lesion was of a primary character. In the 27 post-mortems old valvular disease existed in only 11 cases. In most of these the tuberculosis ran a very chronic course There was no marked preference for either lung.

In an article on the relation of cardiac affections to tuberculosis, Ernest Coulbeaux cites three cases of mitral stenosis. In one the tuberculosis was recognized during life, in another the heart affection alone was noticed, and in the third the cardiac lesion seemed to be secondary to the lung disease. He also reports six cases of mitral insufficiency, three males and three females. In two of these cases the lesions in the lungs were not known to be tubercular until the post-mortem was made. All degrees of change were found in the lungs. Coulbeaux arrived at the conclusion that there does not exist any absolute antagonism between tuberculosis and valvular disease of the heart.

Alfred Eyman, of Wurzburg, in an inaugural thesis, gives the following statistics from the Vienna hospitals. In the Allgemeine Krankenhaus, during eleven years, 19,429 cases of tuberculosis were observed, and in only 34 cases were signs of heart lesions found.

In eleven years, at the Rudolph Hospital, out of 8,224 cases of tuberculosis treated, heart lesions were noted in only 46. Adding the number in both hospitals together, in 27,627 cases of tuberculosis signs of organic heart lesions were noted in .8 per cent.

Again, in eleven years in 3,056 cases of organic heart disease observed in the Allgemeine Krankenhaus 31 showed evidence of tuberculosis, and in the Rudolph Hospital in eleven years out of 1,082 cases of heart disease 38 were tubercular. In both hospitals, therefore, out of 4,138 cases of heart disease 69 were tubercular, 1.7 per cent. of all the cases.

Frommolt, who has written a very exhaustive paper on the subject (*Archiv. für Heilkunde*, 1875), found that out of 7,870 autopsies made in ten years in the Dresden pathological room, 276 presented cardiac lesions, and of these 21 were tubercular, or about 8 per cent. Tuberculosis existed in 5 per cent. of the cases of mitral stenosis and in 10 per cent. of the cases of mitral insufficiency.

In commenting on these statistics, Fraentzel says that while in many cases heart lesion is secondary to tuberculosis, the latter affection is rarely developed in those who have previously had mitral disease.

Krygen, in an inaugural thesis, Munich, 1887, found in 1,100 sections on tubercular subjects ten cases of heart disease:

Aortic insufficiency	4
Mitral "	3
Mitral insufficiency and aortic stenosis	1
Aortic stenosis	1
Mitral and aortic insufficiency	I
Pulmonary stenosis	2

He found healed tuberculosis in 59 cases of valvular disease.

A. Brousse, in a thesis on mitral lesions and tuberculosis, relates a case in which death occurred at 41 years of age from pulmonary tuberculosis in a patient in whom mitral insufficiency had been known to exist many years before the development of phthisis. The patient, although she possessed a strong hereditary tendency to the disease, and was during her life directly exposed and lived under very unhealthy conditions, having suffered from cold, hunger, fatigue, etc., escaped until her forty-first year. When, however, she was attacked she rapidly succumbed to the disease.

Such cases of the delayed onset of tuberculosis in those who have an hereditary tendency and who are directly exposed to the disease are not infrequent in the literature of valvular disease combined with pulmonary tuberculosis.

Pidoux states that the two diseases do not often exist together, and when they are combined, the heart lesion retards the evolution of the tuberculosis.

Teissier says that tuberculosis is always less virulent, often local and runs a very chronic course when mitral disease is present.

Prof. Peters, of Paris, states that in three years, out of an immense number of cardiac cases, he met with pulmonary tuberculosis but five times.

Germain See and Hanot are opposed to the idea of antagonism. They found in 277 cases of valvular disease twenty-two cases of tuberculosis, or about 8 per cent.

Perls had only observed one case of mitral lesions combined with tuberculosis.

It will thus be observed that there is much discrepancy in the results to be obtained from statistics, as well as in the opinion of very distinguished and careful physicians.

In the post-mortem cases much difficulty arises in determining whether the cardiac lesions found are primary and the result of rheumatism and other infectious diseases of early life, or whether they are secondary to tubercular disease.

The frequency with which endocarditis occurs during the tubercular process has been shown by Potain to be much greater than was formerly supposed to be the case.

Teissier (Comptes Rendus, No. 26, p. 1022), has under Potain's directions made some very interesting observations on this point. He describes three forms of endocardial changes which are found in tubercular cases : (1) those of true tubercular character, a condition which is rarely found; (2) vegetative or ulcerative endocarditis produced by organisms which have secondarily invaded those suffering from pulmonary tuberculosis, such for instance as the streptococcus, the staphylococcus, and the bacillus coli communis ; (3) a sclerosis of the endocardium neither characterized by the presence of bacilli of tuberculosis nor pyogenic organisms. This condition is probably produced by the toxin of tuberculosis, and the process is similar to that which occurs in the connective tissue of the liver and kidneys Teissier found this sclerosis of the endocardium, in a greater or less degree, in thirty-five out of one hundred cases.

In Frommolt's cases, as well as those of Germain See and Hanot, the lesions may, in many instances, have been of a secondary and not of a primary character. It is therefore probable that the lesser proportion of five per cent. of mitral cases, which become tubercular, is the outside limit.

This relative infrequency of the combination of the two diseases is more striking when it is considered that the surroundings of many of the cardiac patients are very favourable to the development of tubercular disease. They often are unable to take much exercise and are confined to close rooms. Many of them spend months in hospital wards near tubercular cases and are thus directly exposed to the disease.

In the study of the clinical cases, in which there is a combination of valvular disease and pulmonary tuberculosis, two difficulties present themselves: (1) The difficulty in diagnosis; (2) to decide which is the primary lesion.

One might not at first think there was much difficulty in making a diagnosis between mitral diseases and pulmonary phthisis. It has, however, been pointed out, particularly by French observers, that in some cases of mitral stenosis the difficulty is quite marked. Patients having the latter disease may suffer from dyspnœa, hæmoptysis and emaciation together. Signs of local consolidation may also be present. The pulmonary apoplexy may cause more or less elevation of temperature.

Two cases have occurred in my practice in which this difficulty presented itself. In the first a presystolic murmur was present, as well as other signs of mitral stenosis. Auscultation and percussion revealed the presence of a consolidated patch in the right apex. The character of this was determined by the presence of the bacilli of tuberculosis in the sputum. In the second case the signs of the heart lesions were marked, and similar evidence was obtained of the presence of pulmonary consolidation to those above stated In this latter case the sputum was not examined for bacilli, and I was very doubtful at the time of the presence of tuberculosis, although the patient had been treated for that disease. I have since learned that the patient made a complete recovery from the pulmonary trouble, thus establishing the opinion that it was probably not tubercular.

Whether the lesion is primary or secondary can only be decided in clinical cases by a careful examination into the previous history, as to the existence of rheumatism, or by a definite knowledge of the presence of a lesion previous to the onset of the tuberculosis. It may be here stated that the existence of rheumatism in early life is noted in a small proportion of the cases of the combined disease tabulated in the various hospitals.

In reading over the history of cases one is struck with the fact that when the two diseases occur in combination during the middle period of life, from 30 to 50, and when cardiac compensation is complete, the evolution of the tuberculosis is much delayed. On the other hand, when the disease attacks an individual after middle life, or when from bad habits or bad hygienic surroundings there is a low state of vitality the process is often rapid.

An example of slow evolution came under my observation two years ago. A young lady (the case already mentioned) 24 years of age suffering from phthisis consulted me as to the advisability of going to Colorado. On examination I found distinct signs of mitral stenosis, as well as those of pulmonary tuberculosis. The sputum contained bacilli. The patient was advised to go to Georgia for the winter. She has been examined on two or three occasions since, and the last time, about a month ago, there were signs of decided improvement. I do not at all think in this case the disease would have pursued this course had not the mitral stenosis co-existed with the lung disease.

From the statistics and the observations of eminent physicians the following conclusions may be arrived at:

1. That primary mitral disease and pulmonary tuberculosis rarely exist in the same individual. It would appear that in uncomplicated cases, viz., those in which the other valves are healthy, mitral stenosis occurs more frequently in combination with tuberculosis, whereas when the other valves are affected insufficiency is the more frequent condition.

2. That pulmonary tuberculosis is a very frequent sequel to pulmonary stenosis.

3. The presence of mitral disease acts as a preventive to tuberculosis, especially when the vital powers are at or near their normal standard, and the prophylactic agency is shown in those who have a strong hereditary tendency to the disease and whose surroundings are of a decidedly unhealthy character.

4. In the small number of cases in which tuberculosis follows a mitral lesion during middle life, its evolution is very much delayed. When, on the other hand, from age or bad habits, the vital powers are on the decline, the process is often as rapid as in ordinary cases.

The question arises, why should the lungs become a less favourable ground for the growth of tubercle bacilli when mitral disease is present? The following theories have been propounded:

1. That on account of the passive congestion there is a greater transudation of serum which causes foreign bodies to be more easily removed from the bronchial tubes.

2. That the transuded serum acts as a germicide, thus preventing the growth of bacilli.

3. That owing to the passive congestion a greater number of leuco-

cytes are exuded and that these carry off the bacilli, while at the same time the lymphatic circulation is stimulated.

Professor Peter, in the *Gazette des Hôpitaux*, August, 1893, gave the following explanation: The apices of the lungs are most frequently attacked by tuberculosis, because they contain less blood and permit less ingress and egress of air, owing partly to the comparatively immovable character of the chest wall and also to some extent to the way in which the bronchi leading to these parts branch off from the main tubes. This can be demonstrated in post-mortem conditions. When owing to passive congestion and to the presence of hæmorhagic foci the lower portions of the lung are not sufficient for the aeration of the blood, greater expansion of the upper part is absolutely necessary and the patient is compelled to use greater efforts in respiration, which result in greater dilatation of the air cells in the apices of the lungs. Under such circumstances there will be a diminished tendency to the development of tubercle.

To arrive at a correct conclusion it is necessary to study the minute anatomy of the lungs in which passive congestion, the result of mitral disease, has for some years existed.

The pathological changes have been given by Delafield and Prudden as follows:

(1.) A change in the capillaries in the walls of the air spaces. These are dilated, tortuous and project into the air spaces. The degree of dilatation varies very much.

(2.) A thickening of the walls of the air spaces due partly to the growth of smooth muscular tissue, and partly to an increase of the connective tissue.

(3.) The deposit of pigment.

(4.) The formation of cells within the interspaces.

In considering these changes one might at once conclude that some at least are of no value in preventing tuberculosis, for instance the fibroid thickening and the deposit of pigmentary matter.

There are these four conditions present however which may aid in the prophylaxis of phthisis.

(1.) Increased pressure in the pulmonary circulation.

(2.) The presence of transuded serum in the tissue.

(3.) The increase of involuntary muscular fibre.

(4.) The presence of an increased number of leucocytes in the alveoli.

In the writer's opinion too much importance has been given to the prophylactic agency of the transuded serum. In hepatic cirrhosis we have a similar condition in which, as the result of passive congestion, there is an enormous transudation of serum, and yet it is a well established fact that the ascites of hepatic cirrhosis is frequently complicated by tubercle of the peritoneum.

I am much more inclined to agree with Peters that the passive congestion of the lungs acts as a prophylatic by producing an increased amount of chest measurement, especially in the apices, thus expanding the alveoli. The increase of involuntary muscular fibre, which is more especially referred to by Rindfleisch, enables the patient, more especially by coughing, to expel foreign matter from the alveoli and bronchi.

Rindfleisch is of opinion that the increase of connective tissue in brown induration of the lungs, is not nearly as great as it seems. The bulging of the capillary loops narrow the alveoli, thus lessening the amount of air in the lung and giving rise to a greater apparent solidity.

There is, however, a great increase of involuntary muscular tissue. The sphincter like ring of muscular fibres which surround the bronchial tubes, where they end in the infindibula, are much increased in number. Starting from this point (from the sphincter-like ring) a number of muscular fibres run downwards, forming loops in the walls of the infundibulum at right angles to the ring.

Rindfleisch says : " I think it not unlikely that this very considerable increase of contractile power may underlie the well-known immunity of lungs affected with brown induration for such disorders as set out from the retention of catarrhal secretions."

It appears therefore as probable that the immunity from pulmonary tuberculosis existing in mitral diseases is due to the following conditions.

(1.) The increased amount of blood in the lungs.

(2.) The greater expansion of the apices.

(3.) The increase of the involuntary muscular fibres of the bronchial tubes and alveoli.

It may be interesting here to note that in the opposite condition, where there is a diminished amount of blood in the pulmonary circulation, statistics show that there is a greater tendency to tuberculosis, In Schultze's cases tuberculosis occurred in 83 per cent. of cases of pulmonary stenosis. It is also well known that tuberculosis is a frequent complication of thoracic anæmia which, by process, partially cuts off the pulmonary circulation.

Brachmer thought the smallness of the heart was a cause of tuberculosis, because less blood would be sent to the lungs. He, therefore, considered the strengthening of the heart as an important point in the management of pulmonary phthisis.

Dettmerler has also mentioned (1887) the importance of strengthening the heart muscle as well as the other muscles of the body.

This subject of the relationship between mitral lesion and tuberculosis might be considered simply as an interesting pathological study, but to the writer it presents a practical aspect which is of great importance. If the condition of the lung which results from mitral lesion is a barrier to tuberculosis, can we without injury to the patient bring about a somewhat similar condition in those who do not suffer from heart disease?

It might be stated in this connection that Professor Bier, of Berlin, has instituted a method of treating tubercular joints by producing a venous congestion of the part.

It would be out of the question to induce passive hyperæmia of the lungs even if we knew how it might be brought about. An active hyperæmia would no doubt have a similar effect, and we are acquainted with several methods whereby it can be induced.

In this connection I made an attempt to find out the condition of the lungs found in those who live at high altitudes, as well as those who for years have practised a system of lung gymnastics, so that I might compare the conditions with those already described, which result from mitral disease. The search was not a very exhaustive one, and I regret that I was not able to obtain any definite information on the subject.

It is generally admitted that in cold northern climates the quantity of blood circulating in the lungs is increased and that this moderate hyperæmia prevents the formation of tubercle.

Tucker Wise, in his article on Alpine resorts, says, "It would appear that a general hyperæmic condition of the lungs impedes the deposition of tubercle and restrains phthisical processes. At high altitudes patients have not only the advantage of moderate hyperæmia, but owing to the rarity of the air the lungs are expanded to a greater degree and the apices are subject to an increased movement. Whether the muscular tissue is increased in those who live at high altitudes or not I cannot say."

It will thus be seen that the immunity of those who live at high altitudes is due partly to conditions of the lung similar to those which result from mitral lesions. In addition to these, the purity of the atmosphere and the presence of so much sunlight no doubt aids in the prophylaxis.

Chest exercises as they have been described by La Grange in his work "Medication par l'exercise," and by Otis, of Boston, have also an effect upon the lung similar to that resulting from mitral lesions

The apices are expanded, allowing of a freer exchange of air, a moderate hyperæmia is produced, and it is reasonable to suppose that the muscular tissue is increased in amount.

It is doubtful if we pay sufficient attention to chest exercise as a means of preventing tuberculosis. If such exercises were properly taught in our public schools, they could be continued through life, and would, I think, be the means of preventing tuberculosis in many who are predisposed to that disease.

Another point of practical interest may be here referred to. It is, I believe, the rule with the majority of life insurance companies to exclude all cases of mitral disease, even if the compensation is perfect and the candidate is healthy in every other respect. If, however, mitral disease so effectually prevents the onset of pulmonary disease, as it is shown to do by statistics, should not this fact have some weight in deciding the fate of such cases. I quite believe there are cases of mitral disease which have a much better prospect of long life than many who have small hearts and arteries, and who may, on the first exposure, contract pulmonary tuberculosis.

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HÆMORRHAGIC PANCREATITIS.[1]

BY

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I am indebted to the kindness of my friend, Dr. H. T. Machell, of Toronto, for the privilege of reporting this interesting case.

Douglas G., aged nine months, had been a healthy babe weighing 10½ lbs. at birth, and developed well until his illness. During the first three months he had a great deal of colic, the motions often containing curds. The bowels, although the motions were never constipated, always required some stimulus to excite them to act. A glycerine suppository was generally used. The motions were soft and yellow. In the ninth month they became more liquid, and contained a great many small, yellow, fatty-looking particles. The mother's milk was examined and found to contain a great amount of fat. He had always been a placid child, but in the ninth month he became fretful, and his general condition failed slightly. The mother having become pregnant, it was decided to wean the child, and milk prepared with peptogenic milk-powder was given, but he refused everything but the breast. In those few days he took not more than eight ounces of milk, and as vomiting had occurred the attempt to feed him was abandoned. During the following night sudden profuse vomiting set in, and all nourishment was stopped for some hours. He was purged with calomel, followed by castor oil. The motions were slightly green and contained many solid particles. There was no elevation of temperature nor thirst.

Next day (November 14, 1895) he was better. He vomited occasionally, and had a severe attack of colic; calomel was repeated and a small dose of paregoric given. He was not nursed. He slept fairly well. The temperature was slightly subnormal.

In the morning (November 15) he passed a large, soft, yellow motion and appeared well. He sat up and played with toys. He did not want the breast until nearly noon, when he took it greedily, and again in three hours. Later, he vomited again profusely, was prostrate and inclined to lie quietly. In the evening he became fretful and had a severe attack of colic lasting an hour, with tenderness over the epigastrium. Paregoric was given to relieve the pain, and calomel, followed by repeated doses of liquid magnesia, to move the bowels, but without effect. He appeared to have no pain and showed signs of prostration.

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[1] Read before the Canadian Medical Association, Montreal, August, 1896.

On the following morning (November 16) he was weak and listless. Attempts to give nourishment were followed by vomiting. He had an attack of pain, but not so severe as on the preceding day. Towards evening he grew rapidly worse. All efforts to move the bowels failed When I saw him with Dr. Machell, the medical attendant, he was in great distress and very pallid. The temperature was slightly elevated; pulse weak and rapid. He was constantly moaning and tossing about, and from time to time straining considerably. The thirst was very great. In his napkin there was a small, green motion, chiefly mucus, with traces of fæcal matter. This was the only motion that day, although he had had repeated doses of strong purgatives. The abdomen was slightly distended, and examination of it revealed nothing unusual, except in the region of the ascending colon, where an elongated mass about the size of the middle finger could be felt extending from the costal margin to a point nearly as low as the iliac crest. It was firm, moved with respiration, and was dull on percussion. The abdomen elsewhere was tympanitic. The resemblance of this sausage-like mass to that in intussusception, the failure to move the bowels even with strong purgatives, the straining and vomiting, seemed to render operation advisable, as the only hope of giving relief. In this opinion the father, a physician, acquiesced, and Dr. George A. Peters operated. On opening the abdomen the mass was found to be an accessory lobe of the liver. The intestines were everywhere healthy, and there was no exudate in the peritoneal cavity. The incision did not admit of examination of the other abdominal organs. occurred next morning.

The probability of the illness being hæmorrhagic pancreatitis was suggested, and this was confirmed by the autopsy, in which only a partial examination of the abdomen was permitted. The middle third of the pancreas and its immediate surroundings were found deeply infiltrated with blood, neither the head nor the tail being affected. There was no extensive clot. All other abdominal organs were healthy.

As the autopsy was not done until forty hours after death the pancreas had become so much disorganised by post-mortem change that nothing could be determined from the histological examination, further than that the tissue was infiltrated with blood. There were cells among the stroma, but their nature was not recognisable. The pancreas undergoes such rapid changes after death that an early inspection is necessary to render the histological examination of value.

The disintegration of the pancreas will, doubtless, be especially rapid in children.

A bacteriological examination was made by Mr. J. J. Mackenzie, B.M.A., bacteriologist to the Provincial Board of Health. The only organism present was a bacillus resembling the proteus group in growth and characters. Inoculation on rabbits and guinea pigs showed that it possessed a very low degree of virulence. The bacillus coli communis could not be found, though carefully sought for.

This case presents a fairly typical picture of acute pancreatitis—as typical as could well occur in an infant. The pancreatic disease probably began on the 15th, two days before death, the history preceding that day being simply that of gastro-intestinal indigestion. On the 15th he had a severe attack of colic, followed by marked prostration ; this recurred again next day, and in the evening became extreme. There was some vomiting, and for the last forty-eight hours the bowels could not be made to act, even with strong purgatives. There was extreme distress during the last night, with low fever, great thirst, weak pulse, and, finally, collapse.

The age is unusual for the disease to occur ; there are no cases recorded of the disease in infants. Of all the cases reported the youngest is about 20 years, and the majority are about 45 ; some have been of advanced age. The majority of cases occur in males who have been more or less intemperate and have become very fat.

In most cases there is a history of gastro-intestinal derangement extending over varying periods, often for years, and while the cause of the disease is still uncertain, the general opinion is that it has its starting point in inflammation of the stomach and duodenum, from which the infecting agents gain access to the pancreas by the duct or otherwise. Against this view, however, is the fact that in the majority of cases bacteriological examinations of the pancreas have been negative. In this case only a bacillus of very mild infective character was found.

Few organs in the body are less liable to disease than the pancreas. Owing to its position it is seldom injured, and constitutional infections and disturbances rarely derange its functions materially or injure its tissue. The organ itself is not sensitive, nor is the constitution acutely disturbed by derangements of its function. Recent observations have shown that many, if not all, gland structures furnish to the economy an " internal secretion," in addition to the more manifest functions which they possess. In the case of the pancreas the arrest of the supply of pancreatic fluid, as well as of that of its " internal secretion," could produce only a gradual disturbance of health. It is probable, therefore, that to the implication of neighbouring structures, especially the retro-peritoneal ganglia, and consequent dilatation of the abdominal vessels from the vaso-motor paresis is to be attributed the fulminant symptoms ending in collapse, and even sudden death in many of these cases. In the reports of these cases we read such records as " found dead in bed," or " in a chair as if asleep."

In his Middleton-Goldsmith lecture on " Acute Pancreatitis,' the most thorough exposition on the subject that has yet appeared, Fitz classifies the fifty-four cases which he collected into three classes: (1) hæmorrhagic, (2) suppurative, and (3) gangrenous pancreatitis. In the main, all the cases since reported may be placed under one of these heads. The case of the infant here detailed may, I think, fairly be designated hæmorrhagic pancreatitis, for, although owing to unavoidable circumstances, the results of histological examinations do not clearly demonstrate the existence of inflammatory exudate, the symptoms were sufficient to justify such a conclusion.

In addition to the foregoing, Fitz also detailed a class of hæmorrhagic cases in which only extravasation of blood was found post-mortem, and in which there was a history of sudden death from shock, and no symptoms indicating an inflammatory process.

Various explanations have been offered to account for the hæmorrhage. The pancreas has been compared to the brain in the laxness of its tissue and the ease with which its vessels will yield to pressure but even in the brain rupture never takes place in a healthy vessel. Weakening of the vessel wall from some pathological process must take place before it will dilate or rupture from internal pressure.

Klebs has suggested the possibility of degeneration of the wall of the vessel by the action of the pancreatic secretion. Fat necrosis has been assigned as a cause in those cases in which the necrosis occurs.

As in many cases of pancreatitis, there is a great deposit of fat in the tissues, Sticker believes that repeated and increasingly extensive ruptures take place at the root of the mesentery similar to those occurring in the abdominal wall of very fat people and in pregnancy; that those repeated lacerations interfere with the nutrition of the part, so that ultimately a more extensive rupture occurs, with free hæmorrhage.

The causes of the hæmorrhage are probably various, and all these opinions may be true. Thorough examinations of the small vessels of the gland have not yet been made, and at least until that is done in a series of cases the question must remain in doubt.

Disseminated fat necrosis has been very frequently found in association with pancreatitis. It did not occur in this case. It has usually been found in cases in which there was an inordinately large deposit of fat, but it does not occur even in all these cases. Its causation, as well as its relation to the hæmorrhage, is doubtful. But there is no doubt that either process may occur in the absence of the other.

The diagnosis is of great importance, and presents grave, often insuperable, difficulties. As the disease has become better known in recent years, a correct diagnosis has occasionally been made. The clinical history is that of epigastric pain, gradually developed or sudden and severe, it may be agonizing; tenderness; generally some fulness in the upper zone of the abdomen; nausea and moderate vomiting; usually constipation that may resist the strongest purgatives, but there has been diarrhœa in a few cases. Marked prostration occurs early with low fever, weak pulse, and, finally, collapse. Death has usually occurred within four or five days. If the patient survives a rapid recovery may result, or suppuration or gangrene may follow. The necrosed mass has been discharged *en masse* into the bowel with ultimate recovery. In a case under my care at present the formation of a large cyst followed the pancreatitis.

The affections with which this disease is most likely to be confounded are perforative peritonitis, especially of the stomach and abdomen, and acute intestinal obstruction; with these may sometimes be included irritant poisoning, and hepatic and pancreatic calculi.

In the case here detailed acute obstruction would not have been considered possible but for the malformation of the liver. The vomiting was not extreme, nor did the vomit contain bile, much less become feculent. There was no marked swelling of the abdomen.

Perforation was not deemed possible, because there was no history of gastric or intestinal disease. There was no marked distension of the abdomen or evidence of the presence of gas in the peritoneal cavity; nor was there any initial shock followed by reaction with marked elevation of temperature.

The age excluded the possibility of hepatic or pancreatic colic.

It was not possible to make a positive diagnosis, but, with the exclusion by the operation of acute obstruction of the bowel, the extreme distress evidently due to a lesion somewhere in the abdomen, the moderate distension of the bowels, the failure of strong purgatives to move them, the slight elevation of temperature, and the great prostration seemed a sufficient ground to justify a probable diagnosis of acute pancreatitis, notwithstanding the age of the patient.

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TWO CASES
OF
EARLY ATROPHY OF MUSCLES IN CEREBRAL DISEASE.[1]

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Muscular atrophy in diseases of the nervous system is almost invariably due to lesions affecting the cells of the anterior cornua or the nerves leading from them. Clinically such cases are known as atrophic paralysis, and form a distinct and well defined group. In cerebral disease, or in lesions of the fibres of the cord above the anterior cornua, atrophy is usually absent, although a moderate degree of wasting has often been noted in old standing cases of hemiplegia with contractions and is regarded as due to disease. Of late years, however, cases have been observed in which muscular atrophy has been early noted in limbs paralyzed from various forms of cerebral disease. Contrary to expectation, in some of these no changes have been found either in the anterior cornua or in the peripheral nerves. With the object of drawing attention to this condition I submit the two following cases :

CASE I. Tumour of optic thalmus—hemiplegia atrophy of muscles of hand, forearm and leg—anterior cornua and peripheral nerves normal.

Miss F., æt. 55, was first seen June 21st, 1892. For a month or five weeks past states that she has had pain over the anterior part of the scalp, intermittent, not severe and present chiefly in the morning. She has also had pain in the back of the neck, most marked on rising from the recumbent posture. About the same time she began to experience difficulty in walking, having a tendency to fall backwards and her knees giving way under her. She has vomited once or twice half an hour after her evening meal, without effort or nausea. There has been giddiness. Her friends state that she has been growing stout since her illness began, and that her memory has been failing for three months.

Present Condition.—The patient is well nourished and somewhat stout. Intelligence is fair, but she exhibits no anxiety about her condition, and there is a tendency to laugh easily.

In walking she moves the legs slowly and requires assistance. There is a marked tendency to fall backward and to the left side.

She is unable to use the hands even for eating. The arms and legs both show a marked degree of muscular power.

The left labio-nasal fold is not so prominent as the right, and the movements in the lower part of the face are not quite so marked as on the right, but the upper muscles of the face move normally. The tongue is protruded straight.

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[1] Read before the Canadian Medical Association, Montreal, August, 1896.

The sense of position is normal and there is no ataxia of arms and legs.

Sensation in the face and limb is normal. Both knee jerks are exaggerated, but there is no ankle clonus.

The left eye is shrunken and functionless, the result of an old injury. The right optic disc shows a marked grade of neuritis. The pulse is 90. The heart, lungs and urine are normal.

Mental failure and weakness progressed rapidly, and on July 12th she was admitted to the Montreal General Hospital. She was then quite unable to give any account of herself. She lies on her back with her head slightly retracted, sleeping a great deal day and night. She answers questions only in monosyllables and in slow measured tones after a pause of some seconds, relapsing into a soporose condition when left alone. There is no pain. Urine and fæces are passed in bed.

The left arm and leg are paralysed and flaccid. She is not able to register with the dynamometer with the left hand, but registers 30 with the right. There is some loss of power in the right limbs.

July 15. Urine alkaline s.g 1030 : no albumen ; no sugar. Complains of pain in right sterno-mastoid muscle.

July 20. She lies in the same condition, sleeping most of the time, and snoring loudly. The pain in the neck has gone. There is not much change from day to day.

July 26. Wasting of the left thenar eminence was noticed to-day, and on measuring the following results were obtained :

	Right.	Left.
Arm	9½ in.	9½ in.
Fore-arm	8	7½
Hand over thenar eminence	7	6⅝

There was an inch difference in the legs in favour of the right side. No tenderness of the muscles or nerve trunks present. With the faradic battery a much stronger current was required to produce contraction of the muscles of the left hand and forearm, and in the respiratory muscles of the face. In the leg there was slight diminution of electrical irritability to faradism. The galvanic reactions were not obtained. The atrophy progressed rapidly in the hand, and the thenar and hypothenar eminences became flat and depressed. On Aug. 3rd, she passed into a comatose condition, the breathing became rapid and stertorous, and death occurred on the following day (Aug. 4.)

The measurements of the limbs taken after death were as follows :

	Right.	Left.
Arm	9½	9½
Fore-arm	8	7½
Hand	7	6½
Thigh	14½	14½
Calf	11	10½

During her stay in hospital the temperature was slightly elevated, 98 to 100, and 102½ for three days preceding her death. The pulse was also increased in rate, varying from 72 to 104.

The clinical diagnosis was tumour of the brain, based on the optic neuritis, with other cerebral symptoms. Its locality was regarded as being in the neighbourhood of the cerebellum, owing to the peculiar gait. In the absence of any signs of peripheral neuritis, such as tenderness or loss of sensation, the atrophy of the hand was regarded as due to changes in the anterior cornua of the cord.

AUTOPSY.—*Brain.*—The floor of the third ventricle was full and bulging. The right optic thalamus was enlarged and infiltrated with a white tumour of the same colour as the white substance of the cerebrum ; its boundaries were ill-defined and infiltrating. It was rather firmer than the surrounding brain tissue and extended back as far as the superior vermiform process of the cerebellum. The tumour was placed in Müller's fluid for examination, but during changes in the laboratory was unfortunately lost before its exact boundaries or microscopic characters were determined.

The spinal cord and a portion of the median nerve at the elbow were also removed and placed in Muller's fluid for examination. Sections of the cord at the levels of the 4th, 5th, 6th, 7th and 8th cervical and 1st dorsal nerve were subsequently made and stained by Weigert's method and with carmine. The cells of the anterior cornua presented no diminution in size or number; there was no descending degeneration and the cord was in all respects normal. The median nerve also showed no sign of degeneration.

The abdominal and thoracic organs were under-weight, but otherwise presented no change of importance.

The chief features of this case were hemiplegia and wasting of the paralysed muscles. The wasting was noted fourteen days after the limbs became paralysed. It affected chiefly the thenar muscles of the hand, where the atrophy was considerable, and to a less extent the forearm and leg. The limbs were flaccid and there had never been any irritative symptoms. The wasting in the hand was such as to suggest a lesion of the anterior cornua. Anatomically, however, no microscopic changes were found in the lower motor segment or even in the pyramidal tracts of the cord. During life there was no evidence of neuritis, sensation having been normal, and no tenderness of the nerve trunks or muscles was present.

CASE II.—Sarcoma of crus cerebri—Hemiplegia and rapid atrophy of muscles of hand, forearm, arm and shoulder—Autopsy.

I am indebted to Dr. James Stewart, of Montreal, for brief clinical notes of the following case.

Mr. R., æt. 47. The first symptom noted was loss of colour vision. He then suffered from severe pain in the head. Weakness in the left arm and leg, gradually increasing in intensity, set in. The muscles of the thenar and hypothenar eminences, the forearm, the arm, the deltoid and lower portion of the pectoralis major wasted rapidly and death occurred four months from the onset of symptoms.

Autopsy.—The thenar and hypothenar eminences, the muscles of the forearm and arm, the deltoid and lower portion of the pectoralis major were much wasted on the left side. On removing the brain a greyish, soft, flattened growth lying on and adherent to the right crus cerebri was observed. The growth reached from the anterior border of pons forward to about the level of a line through the middle of the temporo-sphenoidal lobe. The growth was quadrilateral in shape, 1¾ inches long and 1½ inches broad. The third and fourth nerves lay alongside the tumour, whilst the optic tract lay beneath the growth. None of the cranial nerves were involved, a fact which caused much obscurity in localising the growth during life.

Microscopically the tumour proved to be a sarcoma with large vascular spaces. The upper part of the spinal cord was removed and also a portion of the ulnar nerve. Sections of the cord at various levels in the cervical region down to and including the first dorsal segment showed the cells of the anterior cornua to be perfectly normal. There was no degeneration of the lateral columns. The sections were stained both with carmine and by Weigert's method.

Sections of the ulnar nerve were normal. The muscle was not examined.

The chief interest in this case lies in the fact that a considerable degree of atrophy of the muscles of the arm was present, associated with a tumour of the crus cerebri and without lesions of the anterior coruna or peripheral nerves to account for it.

Atrophy of the muscles is occasionally seen in old cases of hemiplegia with contracture, and lesions in the anterior cornua or in the peripheral nerves have been demonstrated. Charcot first described atrophy in the cells of the anterior cornua at levels corresponding with the wasted muscles. Déjerine found degeneration of the peripheral nerves and regards this as the sole cause of the atrophy.

There is, however, a class of cases in which wasting occurs early in the paralysed members and in which no changes either in the anterior cornua or peripheral nerves have been present. The wasting cannot be attributed to disuse, as it occurs too early; and again, it may be present to a considerable extent in muscles only partially paralysed.

Anatomical Lesions.—The pathological conditions in the brain vary both in site and character. In a considerable proportion of the cases tumours have been present, but in others softening or hæmorrhage have existed. Bremer and Carson[1] have collected six (including their own) cases in which a tumour was present. Quincke[2] has reported a seventh and quotes a case of Barresi's and one of Gliky's. Packard, in a paper read at the meeting of the Pædiatric Society in Montreal, 1896, reported a case of a tumour in a child associated with considerable atrophy, and in both my own cases a cerebral growth was present.

In Babinski's[3] case a focus of softening in the centrum ovale minus, in the course of the psycho-motor fibres was found. Eisenlohr reports two cases, in one of which a recent, and in the other an old, hæmorrhagic focus in the brain was found.

The site of the lesions varies, but all involve some portion of the motor tract. A considerable number of the cases of tumour have been in the motor cortex, but in others the paralysis and ensuing atrophy have resulted from disease of the motor tract in the subcortical region and in the internal capsule. The optic thalmus has also been primarily involved with damage to the adjacent internal capsule.

Secondary degeneration of the pyramidal tracts and medulla sometimes occurs, and also degeneration of the opposite cross pyramidal tract of the cord and of the direct pyramidal tract on the same side as the lesion. The degeneration of the pyramidal tracts is by no means constant and it can therefore have nothing to do with atrophy of the muscles.

The most surprising and important fact in these cases of early muscular atrophy is, however, the absence of changes in the motor cells of the anterior cornua, in the anterior nerve roots and in the peripheral nerves. This fact is all the more remarkable inasmuch as the degree of atrophy is often considerable and occurs within a very short period of time.

The following writers (l.c) report cases of early muscular atrophy with integrity of the lower motor segment, determined by microscopic examination of the cord and nerves. Quincke, Babinski, Eisenlohr, (two cases), Bremer and Carson which, with my own cases, make a total of seven.

The muscles in the few cases in which they have been examined present changes similar to those found following affections of the nerves (v. Babinski, Eisenlohr l.c).

No very satisfactory explanation of muscular atrophy with integrity of the lower motor segment has yet been offered. Quincke suggests the presence of trophic centres in the cortex, but were this the case early atrophy might be expected to occur much more frequently. Babinski (l.c.) and Joffrey and Achard[5] suggests that the motor cells of the anterior cornua undergo dynamic changes, sufficient to interfere with the nutrition of the muscles, but not evidenced by anatomical changes.

Symptoms—The period elapsing between paralysis of the muscles and atrophy varies considerably. It is often difficult to fix owing to the fact that wasting is present when the patient first comes under observation and has not previously been noticed by him, and again, its onset may not be observed by the physician until it has reached a considerable degree. The most rapid onset is recorded by Borgherini[6] in which muscular atrophy (amounting to a difference of 1 cm. in the arm, 5 cm. in the forearm, 5 cm. in the thigh and 1 cm. in the leg) was noted on the third day after an attack of hemiplegia, but it is usually observed about three[7] or four[8] weeks after the onset of paralysis. Although paralysis is usually complete, atrophy may occur where paresis[9] only is present.

The muscles of the arm usually present an earlier and greater degree of wasting than the leg. The muscles of the arm, forearm, shoulder and hand, may all be affected, and in one of Quincke's cases wasting began in the shoulder and arms, the thigh and calf. When the hand is affected, the atrophy may reach a considerable degree, the eminences of the thenar and hypothenar groups being flat or depressed, and the first interosseous muscle also showing a considerable degree of atrophy.

The difference in the size of the limbs varies from 4 cm. to 5 cm. In the hands, although the difference in measurement may be slight, the atrophy seems to reach at times a higher grade than in other muscles. From these facts it appears that the muscles most affected are those which suffer most in cerebral paralysis, and in which the movements performed are complex and highly differentiated.

The knee-jerks in the cases under discussion are usually increased and foot clonus has been noted, facts which support the view of integrity of the lower motor segment.

Electrical Reactions.—In the few cases examined the electrical reactions have shown diminished faradic contractility corresponding to the wasting (Quincke). In my first case, however, the faradic irritability was much lowered and strong currents were required to produce contraction. The galvanic irritability has shown slight qualitative and quantitative changes, but never the slow muscular movements seen in nerve degeneration.

Summarising we may state that in a certain small proportion of cases of cerebral disease muscular atrophy occurs early and if present in the hand may reach a considerable degree, and that in these cases no anatomical changes are observable in the lower motor segment.

[1] Bremer and Carson, Am. Jour. Med. Sc., 1851, 1, 133.

[2] Quincke, Deut. Arch. Klin. Med., 42, 492.

[3] Babinski, C. r. de la Société de Biologie, 1886, 76.

[4] Eisenlohr, abstract in Virchow's Jahresbericht d. Ges. Med., 1894, 2, 130.

[5] Arch. de Méd., Ecp , 1891.

[6] Deut. Arch. Klin. Med., 45.

[7] Eisenlohr l. c.

[8] Eisenlohr, Quincke l.c. [three cases.)

[9] Quincke l.c., Case I. Bremer and Carson l.c.

TETANY FOLLOWING SCARLATINA.[1]

BY

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Tetany is observed but rarely; besides the present case I have met with it in only one other instance, a case in which the affection was of the intermittent type and occurred in a man 55 years of age,

This patient was a boy of Italian descent, 5½ years of age, strong looking and well developed. The attack developed on the 16th of April, 1896. I had attended him for an attack of scarlatina which had commenced on the 4th of the same month; it was a well marked case with somewhat severe throat symptoms, the tonsils being much enlarged, although very little false membrane appeared; no untoward symptoms however, had occurred and desquamation then was in progress. I learned that while the child appeared to be doing well, in the afternoon of the previous day his hands and legs had become stiff and extended and painful and that the condition had remained continuously since that time; he had not slept and was very much distressed.

The boy is the eldest of three living children; one other child had died in infancy. He had been fairly strong and healthy; but had been a mouth breather until about a year ago, when adenoids were removed from the vault of the pharynx. During the period of dentition he had frequent attacks of convulsions, and when one and a half years of age had an attack resembling the present one. He was apparently well at bed time but in the morning the mother noticed that the arms and legs were stiff, and the feet pointed downwards and the hands were flexed. This condition lasted a week before entirely disappearing. During the last three years until the present attack of scarlatina he has been well.

The family history points to a strong neurotic tendency, The paternal grandfather is an epileptic now in Longue Pointe Asylum and his great-grandfather was also an epileptic. His maternal grandmother died of apoplexy. An aunt and an uncle are epileptics. His elder brother died of convulsions at the age of fourteen months.

On examination it became apparent that there were present the symptoms of tetany of the continuous spasm type. The fingers were stiff and extended lying closely together, flexed at the metacarpophalangeal joints, the thumbs pressed in upon the middle and index fingers; the hands were flexed on arms, and the elbows slightly flexed, shoulder not affected and freely movable ; the legs were also extended at the ankle, the toes pointing downwards and inwards, and toes flexed, resembling the position in talipes equino-varus, as some have aptly described it. The ankles and wrists were swollen and tender, and the child gave evidence of intense suffering if an attempt was made to move them. The skin was slightly reddened over the joints, the condition resembling acute articular rheumatism. No other muscles were affected. The child cried at intervals from pains in the limbs, doubtless caused by painful muscular cramps. Otherwise, unless moved, he appeared not to suffer. No abnormal condition could be discovered in any other part of the body. Temperature 101°. Urine contained traces of albumen, and excess of phosphates.

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[1] Read before the Canadian Medical Association, Montreal, August, 1896.

Tapping the course of the nerves or squeezing the limbs increased the contractions. This is analagous to Trousseau's sign in which in the intermittent variety, the spasm can, in the interval, be produced at will by pressure on the larger arteries or nerve trunks.

Chovestek's symptom could not be elicited in the facial.

The electrical irritability was not tested, there was marked hyperæsthesia of the limbs.

In the treatment of the case, bromide of sodium and salicylate of sodium with bicarbonate of potassium were employed. The condition improved after the second day, and by the end of a week all the symptoms had disappeared.

Tetany appears to occur under a variety of conditions. Among the causes we find mentioned diarrhœa, exposure to cold, debility due to lactation and rickets; it may appear during gestation, passing away after delivery; it has followed most of the acute infectious diseases ; it sometimes occurs in the epidemic form.

The opinion is entertained by some that it is of the nature of an infectious disease. It thus classed by Osler in Dercum's Text Book of Nervous Diseases, by American authors.

Von Jaksch describes an epidemic form coming on in the spring, affecting men of the working class about the ages of 17 or 18, in whom the facial phenomena, or Chovestek's symptom was very constant ; this is ascertained by tapping on the facial which causes tetanic contraction of the muscles supplied by it. Bernard Vaughan, in an article in the *New York Medical Journal*, December, 1893 propounds the following views in regard to its etiology :

"It may be doubted if a special organism exists, whose toxin has a selective action, as in tetanus, owing to the great variety of causes which may induce an attack: the view that we have here an unstable condition of the nervous system, either hereditary or brought about by debilitative influences, in which various forms of irritation either central or peripheral, mostly toxic and central, excite the attack would seem more in accord with our present knowledge." The fact that in all cases there is an increased excitability of the nerves and muscles to mechanical and electrical irritation is interesting. This is better observed in the intermittent variety. Most observers find an increased excitability to the galvanic current as compared with the faradic, and that spasm is more easily excited with anodal opening and closing than with cathodal, as pointed out by Erb. In this case the child has a history of having had a similar attack to the present one while teething; we have also a well marked neurotic family history, and the child's liability to convulsions points to a weak and unstable nervous system. The cause in most instances is probably some toxic condition of the blood, as in most of the exciting causes, such as diarrhœa, the infectious diseases, dilatation of the stomach, removal of the thyroid, &c., toxic substances are generated. Bramwell's experience with thyroid extract in tetany, in which good results were obtained, is interesting in this connection, and the possibility of its being of use in the frequently associated condition of rickets and laryngismus stridulus is suggested by him; it has been noted that it is mostly in those cases associated with rickets that laryngospasmic attacks occur.

Von Frankel Hachwart has pointed out that the faradic irritability may be normal and the facial phenomena absent, and from experiments he has proved that Trousseau's phenomena is dependent entirely on pressure on the nerve and not on the vessels.

The pathology of the disease is still obscure, no recent light having been thrown upon it, and the question is still open as to whether the seat of change is in the cells and fibres of the cord and medulla, or cortical; how the irritation keeps up a tonic spasm is still a problem, which possibly the recent views of Dercum, Wiedersheim and others as to the mobility of the neurons may make clear. If the neurons, whether peripheral, cerebral or in the cord, can separate so that one is isolated from the other in the various nervous arcs, it appears possible that a tetanic condition may be kept up by an abnormally continuous approximation of associated neurons.

STREPTOCOCCIC PUERPERAL INFECTION—INJECTION OF MARMOREK'S ANTI-STREPTOCOCCIC SERUM—RECOVERY.[1]

BY

H. L. REDDY, M.D., L.R.C.P., Lond.

Professor of Obstetrics, Bishops College University; Physician-Accoucheur to the Women's Hospital, etc.

Mrs. C., English, age 20, primipara, slight build, well nourished, married twelve months; entered the hospital July 7th at 2.30 a.m. in labour and was confined one and a half hours later. Labour normal; position L. O. A. throughout, lasting seven and a half hours; was delivered of a well-nourished child weighing seven and a quarter pounds.

The ordinary aseptic precautions were taken, such as are used in all cases in the hospital. The only abnormal thing to be noticed was an enlarged varicose vein at the inner side of the left labium near the posterior commissure. There was no laceration of cervix or perineum. Temperature first two days normal.

July 9.—Third day, temperature 100°, pulse 90. A dose of castor oil was given, which produced a good motion; patient feeling well.

July 10.—Temperature still remained 100°, pulse 90.

July 11.—Temperature 101°, pulse 90. No cause for the increase of temperature could be found in the pelvis or elsewhere; lochia normal.

July 12.—Patient had a chill and temperature rose to 104°, pulse 106, respirations 28. Tongue thickly coated with a heavy white fur; headache. On examining the vulva the varicose vein was seen to have burst and on its site a whitish membrane about half an inch in diameter was noticed. To the membrane was applied peroxide of hydrogen and an intra-uterine douche given of a solution of permanganate of potash and the vagina packed with iodoform gauze. Ten grains of sulphate of quinine internally and a tablet of two grains of protonuclein given every two hours.

As she had hardly any milk, the child was stopped nursing and she was given Tait's mixture until it had freely acted.

I requested my friend Dr. A. J. Richer, who had just returned from a lengthened period of study at the Pasteur Institute, to make a cultivation of what I believed, and which proved to be, streptococcus membrane, and whose report on the matter I attach.

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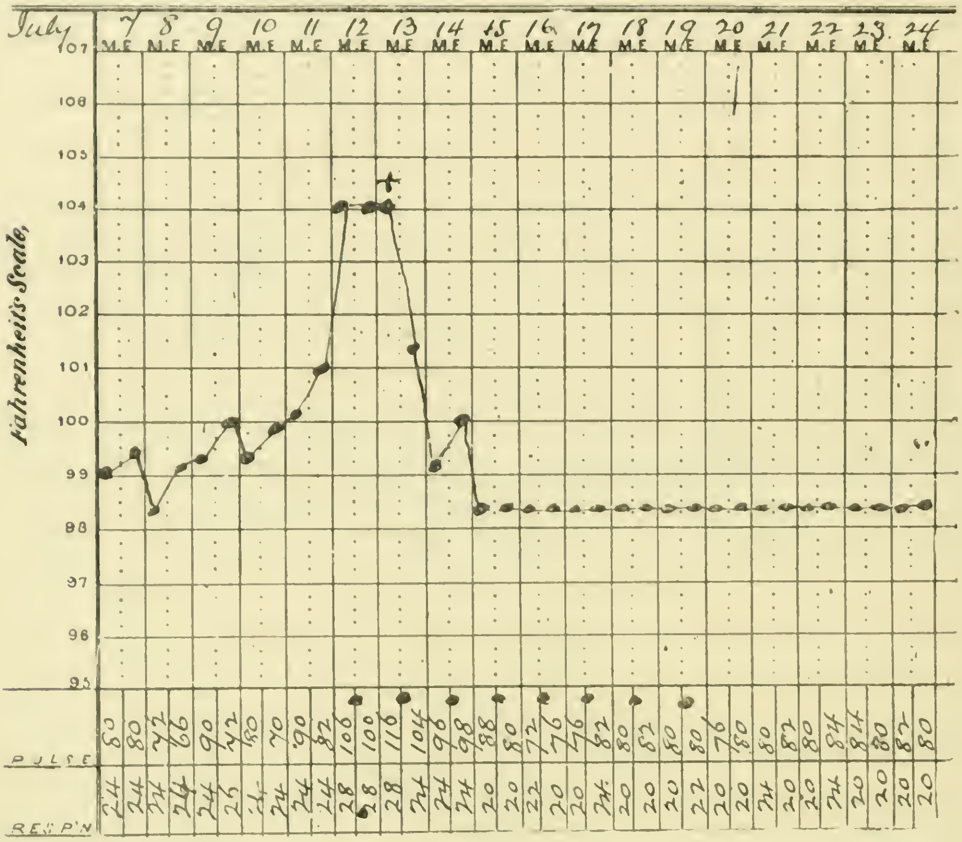
[1] Read before the Canadian Medical Association, Montreal, August, 1896.

The intra-uterine douche was ordered every three hours, as well as an application of peroxide of hydrogen to the membrane, which had now spread to the right side, there being a couple of patches about the size of a quarter of a dollar each. Between the douches the vagina in the vicinity of the patches was packed with wadding soaked in peroxide of hydrogen, left *in situ* ten minutes and afterwards packed with dry iodoform gauze. The following is Dr. Richer's report:

"On the 12th July was asked by Dr. Reddy to make a bacteriological examination of a woman confined five days previously; temperature 104°F, pulse 106, face flushed, suffering no pain, who had received previously several vaginal injections of permanganate of potash, a local application of peroxide of hydrogen, and had been tamponed with iodoform gauze. Direct microscopical examination as well as inoculation in culture media gave negative results. The next day, after having the vagina thoroughly douched with boiled water, inoculation and direct microscopical examination showed streptococci in fairly large proportions, along with numerous colonies of staphylococci and streptobacilli, which appeared to be saprophytic. On the 13th of July an injection of 10 c.c. of Marmorek's antistreptococcic serum (obtained from a horse), was given on the right side, about the



Dots represent the douches. Cross shows when the injection was given.

middle of the abdomen, the ordinary precautions being observed. For forty-eight hours following the injection, there was numbness and tingling of the extremities, and no pain, with the exception of a little at the seat of the inoculation, which was quite free from swelling and redness. No rash was observed."

The injection was given at 1.10 p.m. on the 13th of July. Temperature at the time of the injection of the serum $103\frac{2}{5}$, pulse 116; two hours later temperature 104, pulse 110 full, well sustained. Patient complained of sharp pain on the right side of the abdomen, at the site of the injection, and tingling and numbness in arms, fingers and feet, which continued forty-eight hours. Urine, 23 ounces in amount, normal in character.

At eleven p.m. (two hours later), the temperature had fallen to $101\frac{2}{5}$, pulse 104. After 11 p.m. it fell a degree every two hours until six o'clock the following morning, July 14th, when it fell to $99\frac{1}{5}$, and the membrane on both the right and the left side of the vagina and labium had completely disappeared, leaving a raw surface.

July 15.—At 2 p.m. temperature rose to 100; pulse 96. On account of the character of the pulse, the patient was given 2 drachms of brandy every four hours, local treatment being continued. Hæmaturia appeared of a severe character. At eight p.m. the temperature fell to normal, where it remained until the patient left the hospital.

July 16.—Temperature normal. Hæmaturia continues, but is not so severe. Urine greatly increased in quantity.

July 17.—Brandy was stopped and five minims of tincture of digitalis given three times a day. The protonuclein was stopped and the patient was douched only twice a day. Patient feeling well, sleeping well, eating well.

On July 18, bowels moved twice with Tait's mixture, and as the urine drawn off by a catheter still contained blood, a linseed poultice was applied over the kidneys.

July 19.—Urine passed naturally without blood or albumen, 40 ozs. in twenty-four hours; patient sleeping well and good appetite.

July 20.—Patient stronger, feeling well, temperature normal, no blood in the urine.

July 21.—Patient sat up for an hour; steadily improving.

July 24.—Patient left the hospital perfectly recovered.

On examination before leaving the hospital no signs of the local lesion were observable.

It will be noted that the reaction after the injection was marked by tingling and numbness of the extremities which continued forty-eight hours.

Also that within 36 hours haematuria appeared as a direct result of the injection (and probably slightly affected the pulse, requiring stimulants to be given), and apparently as the effect of the poultices as rapidly disappeared. The severity of the action on the kidneys may have been due to one or both of the following causes: the serum was obtained from a horse, was the strongest so far made by Marmorek, and the dose was large.

The protonuclein, although undoubtedly of service in many cases, as I have proved at least to my satisfaction, aiding in lowering the temperature, probably through phagocytosis or leucocytosis, I do not think could be credited with the complete removal of the membrane in less than twenty-four hours.

The first attempt to get cultures after antiseptics were used failed, showing that they had affected the surface to a great extent, but had failed to reach the bacteria more deeply seated, and those who have had streptococcic infection know by experience that no antiseptics known to them can remove the membrane in less than twenty-four hours so that there shall be not the slightest return of it.

The douches as well as the protonuclein tablets were continued so as to aid in every way possible the recovery, and although for experimental work it might have been very interesting to have depended upon the serum alone, I felt that I should use every means to help the recovery of my patient.

There has as yet been comparatively little work done in obstetrical cases of this kind with serum, and with the literature on the subject you are all doubtless familiar. It seems so far to have proved of value in at least 50 per cent. cent. of the cases in which it has been used. This, I think, is sufficiently encouraging for us to give it a fair trial, especially as it seems to produce but trifling ill effects, which rapidly disappear in the majority of cases. In a large number of such cases we find that the streptococcus, if not alone the cause, is at least one of the most dangerous causes of a condition which unfortunately is present in nearly every country and which proves so fatal. If we cannot always prevent infection we should endeavour to promptly arrest it, which I feel may now be done if the condition is recognised early enough and anti-streptococcic serum injected.

I need hardly say in the majority of cases, in order to treat it scientifically, we should always have a bacteriological examination made.

Although one case would certainly not prove that we have at last found a certain remedy for so fatal a condition, still I believe that if sufficiently used there will be found to be such a measure of success that not to have given it a fair trial would lay one open to the charge either of ignorance or malpractice.

THE PLACE OF PESSARIES IN GYNÆCOLOGICAL TREATMENT.[1]

BY

J. Clarence Webster, M.D. (Edin.), F.R.C.P.E., F.R.S.E.

During the last few years the opinions of many of the leading gynæcologists have undergone a marked change with regard to the value of pessaries in the practice of gynæcology. Many forms of pessary have been devised during the present century, and their claims have been advocated by many physicians of greater or less renown. To refer to them much time would be needed, and though such a survey might prove interesting, it would be of very little practical value.

Owing to comparatively recent researches, whereby we have acquired much accurate knowledge regarding the physics of the pelvis, the normal relations and movements of the various parts of the pelvic floor, and the real significance of their various displacements with a correct estimation of the symptoms caused by them, the employment of pessaries has been largely lessened. Of great importance also in bringing about this change are the advances which have been made in the operative treatment of some of the conditions for which pessaries have long been used.

I think it best to consider pessaries in reference to the conditions for which they have been employed.

Anteversion of the Uterus.—For a long time this term has been used to describe a supposed special diseased state of the uterus. In this condition the uterus is enlarged and its long axis more or less straightened, owing to the diminution of the normal slight anteflexion. The symptoms were related to this altered condition of the uterine axis. Such views must now be considered as absolutely untenable. They are incorrect.

There is no special disease of anteversion; nor does anteversion produce any symptoms. Anteversion is but one of the results of the thickening of the uterus, due to chronic metritis. Even in normal states the uterus may often be found with very little flexion. The treatment of anteversion is the treatment of metritis. Special anteversion pessaries, such as Gehrung's, Thomas' and Graily Hewitt's, were introduced when incorrect ideas as to the pathology of the condition prevailed. They were meant to lie in the vagina, and by means of a projecting portion to press through the anterior fornix against the uterus, whose wall would thereby become bent over it. It was also believed that the pressure of the body would thus be taken off the bladder.

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[1] Read before the Canadian Medical Association, at Montreal, August 28, 1896.

Now we know that no special influence can be brought to bear on the corpus uteri through the anterior fornix by such instruments. The bladder is being emptied and filled, and the uterus, therefore continually changing its position in relation to it and to the anterior fornix Such instruments must be abandoned. As I have already stated, the treatment is that of metritis. Sometimes in this condition it may be helpful to support the uterus for a time in order to relieve congestion where it is much enlarged, and tends to drag down This support may be given by the use of vaginal glycerine plugs, which help to relieve the congestion, as well, in another way. A ring or Hodge pessary may be used for this purpose—without any reference, however, to the so-called anteverted condition of the uterus.

Anteflexion of the Uterus.—There is considerable difference of opinion as to the exact relation of anteflexion of the uterus to the causation of pain and sterility. It is extremely probable that excessive anterior flexion *per se* is rarely the cause of these conditions, for many examples may be found of healthy women in whom this peculiarity of the uterus may be found, unaccompanied by any symptoms. There is a considerable range of normal variation in the extent to which flexion is developed in the uterus. It is to pathological accompaniments of the anteflexion that we must look in those cases in which distressing symptoms are found. These are inflammation in the uterine wall or outside the uterus, or stenosis of the *os externum* or *os internum*.

The treatment of anteflexion is simply the treatment of those associated pathological conditions. For a long time uterine stem-pessaries have been used for the purpose of straightening the uterus. Their use is based upon a wrong understanding of the pathology, and they are dangerous, because of the injury they may cause to the uterine mucosa, and because they may lead to septic infection. All forms of this instrument should be abolished, whether simple firm stems like Amann's, soft rubber stems like Greenhelgh's, or firm stems combined with vaginal pessaries like Beigel's.

In cases in which the uterus is much enlarged from inflammation, support of the organ for a time by means of vaginal plugs, Hodge or ring pessaries, may be beneficial. Their use has, however, nothing whatever to do with the presence or absence of anteflexion.

Retroversion of the Uterus.—There is some difference of opinion as to the part played by a backward displacement of the uterus in the causation of symptoms, which are so often found accompanying the condition. Some hold that retroversion *per se* does not produce troublesome symptoms ; they state that normally the uterus is constantly changing its position, according to changes in the condition of bladder and bowel, and that it may, when turned to the back, trouble the woman as little as when turned to the front. They state that the symptoms which are so often found along with retroversion—*e.g.*, pain and weakness in the back, menorrhagia, &c., are due to accompanying pathological conditions—viz., inflammations outside the uterus, inflammations in the uterus itself, sub-involution, some prolapses of the organ.

In favour of these opinions may be mentioned the fact that cases are found in which, along with a retroverted uterus, no symptoms whatever are found. Moreover, the forward position of the uterus, as a whole, does not seem necessary to health, because, in certain cases, retroposition of the uterus may exist along with perfect health.

Other authorities hold that the backward displacement *per se* may lead to bad symptoms.

As regards the use of pessaries, the former school hold that they should be used in a smaller number of cases. They state that the instruments act by supporting the uterus as a whole, relieving the congestion, and thus tending to an improvement in the pathological conditions accompanying the backward displacement.

The latter school hold that, whenever the uterus is retroverted, it should, if possible, be turned to the front, and kept there by means of a pessary. They hold that the instrument gives relief because it keeps the uterus anteverted.

It is not necessary to enter into a consideration of these two views. I would merely desire to point out that much more attention must be paid to the statements of the former school. I am inclined to think that the influence of the retroversion *per se* in causing symptoms has been greatly exaggerated.

Whatever views may be held regarding the pathology of retroversion, it may be stated that, as regards the treatment of the condition by pessaries, they are to be used with discrimination, and only when necessary.

VARIOUS CONDITIONS OF RETROVERSION IN RELATION TO TREATMENT BY PESSARIES.

1. Retroversion accompanied with fixation by means of peritonitic adhesions.

In such cases the uterus cannot be replaced—*i.e.*, turned to the front. Pessary treatment is of no avail. The case must be treated by douches, baths, electricity and glycerine plugs. Stretching of adhesions by means of massage or by means of vaginal dilators, *e.g.*, Bozeman's, is recommended by some.

2. Retroversion of a freely movable uterus, not enlarged, unaccompanied by pelvic trouble.

In such cases there seems to be no necessity, as a rule, for the replacement of the uterus and the introduction of a pessary. When, however, women in such a condition are liable to the strain of heavy lifting or to chronic bronchitis, it may be considered advisable to use a pessary for the purpose of keeping the uterus anteverted. For, undoubtedly, the uterus may, when retroverted, show a greater tendency towards prolapsus under the influence of increased intra-abdominal pressure than when it is anteverted. In these cases the Hodge or Albert Smith pessary does well.

3 Retroversion of the freely movable puerperal uterus, unaccompanied by pelvic troubles.

It is now recognised that normally, in many women, during the involution of the uterus in the early weeks after labour, the uterus may be turned to the back.

When, in such cases, good health exists, no pessary treatment is necessary, unless it is known that the patient has suffered previous to her pregnancy, or unless she is subject to strains, which increase the intra-abdominal pressure.

The Hodge or Albert Smith pessary may be used in these cases.

4. Retroversion of the movable pregnant uterus in the early months. In every case the uterus should be replaced, and a pessary worn until the pregnancy has well entered the fourth month—*i.e.*, until all danger of an incarceration in the pelvis is past.

The Hodge or Albert Smith pessary may be used.

5. Retroversion of a movable uterus where pelvic symptoms are present, but where the ovaries are not prolapsed into pouch of Douglas, nor any special tenderness exists in the perimetric or parametric tissues.

In such a case the uterus should be replaced and a Hodge or Albert Smith pessary introduced.

6. Retroversion of a movable uterus where pelvic symptoms are present, and where one or both of the ovaries are prolapsed into the pouch of Douglas.

These are generally very troublesome cases to deal with. If the ovaries be inflamed as well as prolapsed, no pessaries should be used until glycerine plugs and the vaginal douche have been used. After the uterus is replaced it is often a matter of difficulty to select a pessary. In a certain number of cases, owing to the sensitiveness of the ovaries, no form of instrument can be worn. In other cases a Hodge or Albert Smith pessary acts well and causes no pain, even though the ovaries remain prolapsed. Sometimes a Thomas' pessary with a thick soft rubber upper end may be more suitable than entirely hard instruments.

Often a soft rubber ring pessary may be borne when no hard instrument can be tolerated. In all cases where the ovaries are noticeably tender or inflamed, it is best, after the use of the douche and plugs, to use a ring pessary for a time before trying one of the hard instruments. Though the ring may not keep the uterus to the front, merely acting as a general support to the uterus, it has a beneficial influence in allowing congestion of uterus to be relieved.

In some cases of prolapse of one ovary only benefit may be obtained from the use of a hard instrument in which the upper angle on one side is absent to ensure non-pressure on the ovary while the pessary is in position.

7. Retroversion of a movable uterus, accompanied by pelvic symptoms, where old posterior perimetritis or some remains of cellulitis are present.

These cases are also very troublesome. The line of treatment as regards pessaries is the same as that laid down in the last section.

Retroflexion of the Uterus.—All that has been said regarding the use of pessaries in the treatment of retroversion may be stated with regard to retroflexion. Practically, wherever retroflexion exists retroversion is present, and the employment of pessaries like Hodge's and Albert Smith's, after the replacement of the uterus, is related primarily to the posterior version, not to the flexion. Disappearance of the flexion depends on the consistence of the uterus and its relation to the intra-abdominal pressure.

Downward Displacements of the Pelvic Floor.—The pelvic floor is liable to various downward displacements. The floor is to be regarded as a strong suspensory structure which closes the pelvic outlet. Its strength is mainly due to certain dense fascial layers, but also to several muscles.

The main conditions which are related to the formation of displacements are increase in intra-abdominal pressure, weakening of the structures which compose the floor, solutions in continuity of the floor.

The whole floor may be displaced downwards. This is a rare condition. It is sometimes found in early life or in cases of injury—*e.g.*, where a heavy cart wheel has passed over the abdomen.

Practically we have to deal only with partial displacements of the floor. In several of these forms pessaries may be beneficially employed.

1. The anterior vaginal wall (*anterior enterocele*), or it along with the bladder (cystocele), may alone prolapse.

In these cases a ring pessary, a diaphragm ring or a Hodge pessary with transverse bars in its lower half may be used with benefit. But in cases where there happens to be marked rupture of the perineal body, only the ring pessaries need be tried, and even they may not be retained. A plastic operation is of great value in this condition.

2. The posterior vaginal wall alone (*posterior enterocele*), or it along with the anterior rectal wall, may become prolapsed. In such cases the same forms of pessaries may be tried. Operative treatment is important.

3. *The uterus alone* may be prolapsed. In this condition the uterus usually lies retroverted.

As it becomes more marked it tends to drag down the structures attached to it.

It is only the slight degree of prolapse to which this section refers. In such cases a Hodge or Albert Smith pessary should be tried. A ring may also be used, but only where the others fail.

4. The *uterus* may be considerably prolapsed along with the *anterior* and *posterior vaginal walls.* In these cases a Hodge pessary may be used to keep up the parts, but if there be a bad rupture of the perineum, it will not remain in position. A ring may then be often used with advantage, or a Zwanck pessary may be servicable. Some prefer to use a ball-pessary.

Operative treatment is important.

5. The downward displacement may be so extensive that the uterus protrudes beyond the vulva.

In these cases, especially if of old standing, no pessary will remain in the vagina, unless it be held in position.

For these cases operative treatment should be carried out. Where this is inadvisable or is objected to, the cup pessary attached to an abdominal belt, or a T-bandage, may be employed. In dispensary practice one sometimes finds that women prefer periodic packing of the vagina with oakum. This should only be carried out after the the menopause.

Operative treatment in such cases is most valuable.

Fibroid Tumours of the Uterus.—In cases of small fibroids of the uterus giving rise to dragging down symptoms, the use of a Hodge or ring pessary may be beneficial in supporting the organ.

Mode of Action of Pessaries.—1. Pessaries of the Hodge type.—It used to be taught that when this form of instrument is in position the intra-abdominal pressure acts chiefly on the lower end of the instrument, pushing it downwards and thus causing the upper end to rise and move forwards in the posterior fornix, tilting the uterus forwards.

This explanation is not correct. When the pessary is in position it lies in the vaginal slit between the pubic and sacral segments. Intra-abdominal pressure acts at right angles to every point of the floor, and consequently acts with equal force on all parts of the pessary.

The instrument acts in two ways: (*a.*) It helps to keep up the uterus as a whole, thus tending towards the relief of the congestion of the organ.

(*b.*) The upper end of the pessary affords a support over which the posterior vaginal wall pulls on the cervix in an upward and backward direction, the body of the uterus consequently tending to be kept forwards. In fact this action makes up for the loss of function in the utero-sacral ligaments which, in the normal state, draw the cervix upwards and backwards, but which in cases of retroversion lose this power through the stretching to which they are subjected.

2. Ring pessaries act merely as a means of support. They lie between the pubic and sacral segments, stretching the vagina somewhat transversely. They tend to prevent the vagina and uterus from becoming prolapsed. The ring does not act in the posterior fornix like the Hodge pessary in the majority of cases. Sometimes, however, it may have this action, preventing the uterus from becoming retroverted after it has been turned to the front.

3. Zwanck's pessary acts through the width of its wings. Many patients prefer this instrument because it can be so easily introduced and removed.

4. Ball pessaries act merely by distending the vagina.

5. Vagino-abdominal pessaries keep up prolapsing parts by means of the suspension from an abdominal band.

Contra-indications to the Use of Pessaries.—Fixation of the uterus so that the fundus cannot be turned to the front. Interference with the mobility of the uterus as a result of some swelling—*e.g.*, tumour of ovary, etc. Recent acute inflammation in any of the pelvic tissues or viscera. Tenderness of the vagina. Certain tumours of the uterus or vaginal walls.

Some Ill-effects of Pessaries.—Pain may result; the functions of the bladder or of the rectum may be interfered with; ulceration of the vaginal walls or cervix may occur; perforation of the rectum and bladder may take place; coitus may be made difficult.

These troubles may result from pessaries when they are too large, when misplaced, when not kept clean, when worn too long without change, or when some contra-indication has not been regarded.

VAGINAL FIXATION OF THE ROUND LIGAMENTS.

A New Operation.[1]

BY

Hiram N. Vineberg, M.D., New York.

The subject which I have chosen is one upon which I have bestowed a good deal of attention for the past three years. It may be of interest to first give a brief sketch of the history of the different phases through which vaginal fixation has passed, and to state concisely the part your essayist has taken in the evolution of the operation.

In 1888 Schücking,[2] of Pyrmont, devised the method of fixing the uterus by means of a suture passed through the fundus of the uterus and the anterior vaginal wall and tying the two ends of the suture together. Although he claimed to have had good success with the operation, it never became popular owing to the unsurgical procedure of thrusting an armed needle blindly through important tissues. Theoretical objection was borne out by practical experience, for the bladder was frequently pierced in this step.

Sänger[3] about the same time proposed that the fundus uteri be sutured directly to the anterior vaginal wall by incising it and pushing up the bladder from the uterus. He did not, however, put his suggestion to the practical test. This was left for Mackenrodt who, in a paper read before the Berlin Gynæcological Society, on May 27, 1892, described the operation afterwards known by his name. The steps of the operation consisted in making a longitudinal incision in the anterior vaginal wall, extending from near the urethral meatus to the vaginal attachment of the cervix, dissecting the two flaps thus made from the underlying bladder, making a transverse incision in the denuded part down upon the cervix, passing one or two sutures in the anterior uterine wall immediately above the internal os, carryin these sutures through the vaginal flaps and closing the incision with a continuous catgut suture. The peritoneum was not purposely opened in this operation.

On June 7th of the same year Dührssen[4] described a somewhat similar procedure of vaginal fixation in which he, however, made a transverse instead of a longitudinal incision in the anterior vaginal fornix, and sutured the body of the uterus transversely to the wall of the vagina. Then followed a bitter polemic battle between Dührssen and Mackenrodt as to the claim of priority. The operation was soon taken up by other gynæcologists, in whose hands it underwent several modifications, mostly of a similar nature, though the operators worked independently of one another. This circumstance furnished a striking illustration that the workers in this field experienced the same defects with the method, and were led to overcome them by similar procedures. The chief defects of the method this time were two. The first was, that the uterine sutures had to be passed mainly by the sense of touch, and the second was, that the sutures were carried too low down through the uterine wall, and, as a result, relapses were common. Other defects were revealed later.

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[1] Read before the Canadian Medical Association, Montreal, August, 1896.

[2] Centbl. für Gynaek., 1888, No. 12.

[3] Centbl. für Gynaek., 1888, No. 2.

[4] Zeitsch. für Geburts. u. Gynaek., Bd. XXIV., and Centbl. für Gynaek., 1892, p. 924.

It was in the beginning of October, 1893, that the writer first performed the operation, and he presented a short paper on it before the Obstetrical Society of New York, November 21, 1893.[1] In this communication he embodied the report of four cases, and stated that the above described technique differs from that given by Winter and Mackenrodt, (1) by preceding the operation by a curettage ; (2) by anteverting the uterus to such a degree that the fundus presents at the vaginal wound. I deem this quite an advantage, in that it facilitates the passing of the uterine sutures and avoids the possibility of injuring the bladder ; (3), in passing the sutures through the uterus nearer the fundus than do either Winter or Mackenrodt.

In the *New York Medical Journal*, for October 27, 1894, in a paper entitled " The Technique and Indications of Vagino-Fixation," I gave, with the aid of several illustrations, a full description of the operation, and described a knife and sound that I had devised for it. In order to test the indications of the operation, I had performed it in all cases of backward displacements with or without adhesions. In the cases (nine in number) of perfectly movable uteri without any appreciable adhesions, there were both a symptomatic and an anatomical cure in all. In the remaining seven cases in which adhesions to a greater or less extent existed, a symptomatic cure was obtained in some. In others the failure was complete, the uterus returning to its former faulty position, and the former symptoms recurring shortly after the patient left her bed. As a result of this experience, I expressed myself as follows : " The operation is indicated in mobile retroversions or retroflections that are attended with symptoms, and which for one reason or another are unsuited for treatment by pessaries or tampons. In other words, it was contraindicated when adhesions were present or palpable disease of one or other adnexa."

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[1] The New York Journal of Gyn. and Obst., January, e894.

While performing the operation on several occasions, it occurred to me how easy it would be to open the peritoneum and deliver the fundus entire through the vaginal incision, and with it the adnexa, which could be treated on the same surgical principles as through an abdominal incision. This I carefully did in a case operated upon on November 25, 1894, and ever after, in almost every case, I purposely tore or cut the peritoneal cavity with my fingers, breaking up any adhesions of the uterus or of the adnexa through the vaginal incision and treating the latter upon conservative principles, excising or puncturing small cysts in the ovary or amputating a portion of the diseased tubes, or if both tube and ovary were hopelessly diseased, ablating them as one would in an abdominal section. In the *New York Medical Record* for March 2, 1895, I published a short paper on this subject, entitled " Vaginal Coeliotomy," with remarks on the new field it opens up for the treatment of backward displacements of the uterus with diseased adnexa by vaginal fixation." The experiences gained with this method up to January of this year, were embodied in a paper entitled " Conservative Surgery upon the Uterus and its Adnexa through the Vaginal Route," read before the New York County Medical Society, on February 24th, and published in the *American Medico-Surgical Bulletin* for March 7, 1886. Forty-two (42) cases were reported, in thirty-two (32) of which vaginal fixation was done in addition to the conservative work upon the adnexa to correct an existing backward displacement. The results were good in all with one exception, and that was in the case of an unmarried lady of this city, a patient of my old friend Dr. A. A. Browne.

I do not wish it to be understood that all the other cases were perfectly cured. There was an anatomical cure in all with the above stated exception, and everyone experienced improvement, many being entirely freed of their former symptoms, while others were merely benefited. The failure to effect a perfect clinical cure in some of the cases, however, can not be laid to the fault of the operation. It was in my estimation due to the pathological condition present. When a uterus has been in retroversion for a sufficient length of time to bring about a marked structural change in its tissues, known as " chronic metritis," or aveolar hyperplasia, correcting the mal-position is not going at once to bring about a disappearance of the pathological elements in the uterine tissues. We must not expect miracles from operative procedures, and if we always bear in mind the character of the existing pathological changes, we will be in a better position to know how much we may reasonably expect from our remedial agents, be they medicinal, mechanical, or surgical.

Up to the beginning of this year no serious criticisms of the operation had been offered. Those that had heretofore been urged were merely of a theoretical nature, i.e., that bladder disturbances must necessarily follow—that the results could not be permanent, etc., etc. As a matter of experience, however, these charges were shown to have no foundation in fact. There were no bladder disturbances and the anatomical results were permanent with the improved technique that had been adopted. But, about this time, like a thunder-bolt from the clear skies, came disturbing reports from Germany of several cases in which serous difficulty had been encountered in labour as a consequence of the operation. The reports rapidly multiplied, and for a few months every issue of the *Centralblat für Gynækologie* contained a fresh report of the kind. In March of this year, I was enabled to collect nine of such cases in a short paper[1] read before the obstetric section of the New York Academy of Medicine. About this period appeared a paper by Miländer[2] on dystocia following ventro-fixation. A careful analysis of this report and of the cases of dystocia following vaginal fixation revealed the significant circumstance that they had very much in common, and that dystocia occurred in the cases in which a too firm and extensive union had taken place between the fundus and abdominal wall in the one instance and vaginal wall in the other instance. The lesson brought home by these cases was that they were the result of technique. No cases of dystocia had been met with in cases of ventro-fixation operated upon after the Olshausen's method, in which the round ligaments and adjacent broad ligaments were stitched to the abdominal wall, and no cases of difficult labour had been met with in vaginal fixation, in which a technique similar to that practised by the writer had been carried out, that is, when a longitudinal incision had been made, and the fixation sutures were not passed directly across the fundus, but about one or two centimetres below it. In my own cases, five pregnancies, to my knowledge, have occurred. One woman purposely brought on an abortion at the third month, and the other four went to full term, having a normal gestation and an easy and normal labour. In the last case forceps were used, but the gentleman who was called in to apply them, assures me that there was no strong indication for their use, but that the attendant had begun to administer chloroform very early in the labour, and thus had brought about acerta in degree of uterine inertia in the second stage.

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[1] Medical News, March 14th, 1896.

[2] Zeitsch, für Geburts u. Gyn., Bd., XXXIII., Heft. 3.

In spite, however, of this favourable experience with pregnancy and labour after my method of doing vaginal fixation, I deemed it wise, in the light of what had been observed in Germany, and in cases of ventro-fixation, to further modify the technique, so as to entirely preclude the possibility of dystocia following as a result of the operation. I have before stated that no cases of difficult labour have been met with in ventro-fixation where the Olshausen method of stitching the round ligaments to the abdominal wall has been employed. I reasoned why not do the same thing in vaginal fixation instead of suturing the uterine wall to the vagina, the round ligaments could be sutured instead, and thus the fundus and body would be merely suspended and would remain unfettered in the event of enlargement as in case of pregnancy. The same train of thought occurred to Wertheim,[1] of Vienna, who was led to a similar procedure to that which I had employed. In point of time my first operation and my publication[2] of the method preceded his, but our work was done independently of each other. I performed my first operation on February 2nd of this year. In the first case the round ligaments alone were used as the means of suspension. In the other cases, in addition, a suture was carried across the anterior wall of the uterus, about midway between the os internum and fundus. This suture can have no unfavourable influence upon gestation and labour, while it materially aids in securing a permanent anatomical result. It remains for me now to describe the technique which I will do as briefly as is consistent with clearness.

The patient is thoroughly prepared as she would be for vaginal hysterectomy, and as a matter of precaution the abdomen is prepared for a laparotomy, in the event of having to complete the operation from above. The cervix is caught by a couple of volsella and drawn well downwards and outwards. The interior vaginal wall is seized by a volsellum near the urethral meatus and is drawn upwards, thus putting it on the stretch. With a convex blade scalpel a longitudinal incision is made in the median line, extending from one to two centimetres below the urethral meatus to the vaginal attachment of the cervix. This incision is to be carried through the whole thickness of the vaginal wall to the underlying bladder, care being taken not to wound this important structure. It is wise to take the precaution before making the incision to pass a sound into the bladder to ascertain the thickness of the vaginal wall, and the level of the lower attachment of the bladder. The next step consists in separating the two vaginal flaps from the bladder partly by dull and partly by sharp dissection. It is well to make a free dissection and obtain a fairly wide flap on either side. The two flaps are now held asunder near the cervix by tenaculа and a semi-lunar incision is carried down upon the cervical tissue in the already denuded portion. Having thus freed the attachment of the bladder to the cervix, the bladder is gently pushed up with the palmar surface of the index finger, as is done in vaginal hysterectomy. A short retractor is next placed in the anterior fornix, so as to hold the bladder well out of the way and to expose the lower part of the uterus. With a stout curved needle, a traction suture is carried through the anterior wall of the uterus with the aid of sight as high up as can be conveniently done. The anterior retractor is now removed and the cervix is pushed with the volsella downwards and backwards in the posterior fornix. This step, with the aid of the traction suture, brings the uterus well into the vaginal incision. If the peritoneum has not been torn through in pushing up the bladder, it can now be readily opened with scissors and the opening enlarged with the fingers. If the case be an easy one, that is, if there be no firm and extensive adhesions, the uterus can now be readily delivered through the incision by hooking two fingers behind one of the horns and forcibly anteverting it. In other cases it may be necessary to employ two or more traction sutures introduced one above the other. The body and fundus can thus be entirely delivered through the incision and made to present at the vulval orifice. The adnexa, if not too extensively and firmly adherent, can be drawn out one after the other with moderate ease, and subject to whatever surgical treatment their condition indicates. I must here emphasize what I have said on former occasions, that, as soon as the adnexa are delivered they can be treated on conservative principles, just as expeditiously and with the same degree of precision as through an abdominal incision. The one difference between the two routes resides in the fact that it is usually more difficult to deliver the adnexa through the vaginal than through the abdominal one. There is another point upon which I desire to lay stress, and it is this, when the adhesions are very extensive and firm, and where there is considerable infiltration and thickening of the broad ligament, it more prudent to close the vaginal incision and complete the operation from above. It is for this reason that I have my patient invariably prepared also for laparotomy. In those cases in which there is no affection of the adnexa, as may be ascertained by direct palpation with the fingers in the peritoneal cavity, there is no occasion to deliver either them or the uterus. The operation is then much simpler and more easy of execution. After making the opening into the peritoneum and exploring the adnexa, the two fingers are hooked behind the broad ligament on one side near the horn of the uterus. In this way the round ligament on the corresponding side is brought to view. It is grasped by an artery forceps and thus held until a suture is carried around it. The suture should be passed about one to two centimetres from the horn of the uterus and may be made to include a portion of the adjacent broad ligament. This suture is then carried through the vaginal wall at a point corresponding to the lateral sulcus immediately below the pubic arch and tied moderately loosely. The same procedure is repeated on the opposite side. The slit in the peritoneum is then closed by a continuous catgut suture and the vaginal incision is closed also in the same manner, only stouter catgut is used. Before closing the vaginal incision, the single uterine fixation suture (the first traction suture can be made to serve this purpose) is carried through the vaginal flap on either side and is tied fairly tight at the completion of the operation. For the fixation suture of the round ligament I employed silkworm gut, and for that of the uterus, braided silk. In the event of there being a redundancy of the anterior vaginal wall or a cystocele, a strip corresponding in width to the degree of relaxation is excised from the flap, thus doing an anterior colporrhaphy. It is usually necessary to withdraw the urine for two, three or four days. The patient is kept in bed for twelve or fourteen days and the fixation sutures are removed at the end of three or four weeks. I have performed this operation thus far in ten cases, in seven (7) of which, more or less conservative surgical work was carried out on the tubes and ovaries—in the remaining three (3) cases these were found to be normal on direct palpation and were subsequently left intact. Eight (8) of the cases have been under observation for a period longer than three (3) months.[1] In all of these the anatomical cure has been perfect, and in all with one exception there has been a satisfactory clinical cure One of the earlier cases is now in her third month of pregnancy. The gestation is progressing favorably and the uterus lies in normal position. The only symptom from which the patient is suffering is some frequency of micturition—a symptom that existed with much greater severity before the operation.

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[1] Cent. f. Gyn., 1896, No. 10, March 10, 1896.

[2] The method was briefly described in a paper read by me before the Obstetric Section of the New York Academy of Medicine, on February 27th, 1876.

The advantages this operation has over Alexander's operation are :

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[1] It has been my experience that when the uterus stays in good position for three or four months, it remains so permanently.

(1) it avoids two external incisions with their liability to suppuration; (2) it precludes the possibility of hernia so common after Alexander's operation; (3) it has a much wider range of applicability having for its field all backward displacements with or without adhesions; (4) it permits direct surgical treatment of the tubes and ovaries; (5) it is more certain in its execution as the round ligaments are often difficult to find at their external insertion and not infrequently break or tear out; (6) it is more certain in its permanent results. All operators excepting Edebohls claim an anatomical cure only of from 80 to 90 per cent. with Alexander's operation; with vaginal fixation of the round ligaments, after the writer's method, the anatomical cures thus far have been 100 per cent. and from the nature of the technique, it is safe to predict that this percentage or, one very nearly as high will be maintained in future cases. The only advantage Alexander's operation may have over this method is the certainty of freedom from disturbances during pregnancy and labour, but on theoretical grounds and from the experiences gained with the Olshausen's method fixation of the round ligaments ought to be attended with just the same immunity in pregnancy and labour as external fixation of the round ligaments in the abdominal wall. (Alexander's operation.) This method has the following advantages over ventro-fixation; (1) it is a less serious operation; (2) it avoids an external incision with its liability to suppuration; (3) it avoids the possibility of hernia; (4) it suspends the uterus in a position corresponding more closely to the normal one. The advantages of ventro-fixation on an abdominal incision in a certain class of cases has already been dealt upon.

Every gynæcologist should render himself equally expert in the vaginal and abdominal routes, and be ready in each case to perform the operation most suited to the case, with the least immediate and subsequent risks to his patient.

THE ELECTRO-MAGNET IN OPHTHALMIC SURGERY, WITH SOME ILLUSTRATIVE CASES.[1]

BY

F. BULLER, M.D.,

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Since the electro-magnet has come into use in ophthalmic practice, we have a ready means of removing many foreign bodies from the interior of the eye which would otherwise baffle surgical intervention and ultimately destroy the vision of one or both eyes.

I do not mean to say that every piece of steel or iron can be removed from the interior of the eye by means of the electro-magnet, or that when removed the eye will always make a good recovery, but of this I am certain, viz., that with proper appliances many eyes can be saved which formerly would inevitably have been lost.

I have had no opportunity of using the large magnet of Baab, but can readily believe it might have a larger sphere of usefulness than the small magnet I have been in the habit of using for some years. This instrument is the Bradford magnet, and is fairly powerful in its action, since we have the means of attaching it to the electric lighting current. This is done by means of a somewhat formidable dynamo transformer of the constant current used in the hospital for lighting. The magnet is thus rendered much stronger and more reliable in its action than it used to be when attached to a Grenet battery cell.

I may say, to begin with, I have never yet been fortunate enough to extract a foreign body from the eye which I could not accurately locate before operating. But, on the other hand, I never failed to extract any fragment of iron or steel which I could see before making the attempt to remove it. I would infer from this that the point of the magnet must be brought very near to, or in actual contact with the foreign body, before it will exert sufficient magnetic attraction to withdraw it from the eye. If this be true, it is easy to understand why the chances of success are but slight when the exact position of the foreign body is unknown.

Small particles of metal which have not passed beyond the iris or lens can often be seen by the naked eye or with the aid of focal illumination, but those which have entered the vitreous chamber can only be seen with the ophthalmoscope.

There is one practical point which I wish to emphasize, namely,—

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[1] Read before the Canadian Medical Association, Montreal, August, 1896.

the sooner an expert examination can be made after the accident, the better will be the chance of making an accurate diagnosis. The transparent media of the eye are likely to become clouded, more or less rapidly, after such accidents, and a delay of some hours or days may make all the difference between success and failure.

I believe that a large majority of injuries to the eye occurring amongst metal workers are inflicted by quite small fragments of steel, chipped from the edge of hammer or chisel.

These commonly vary from two to four millimetres in length and are much less in breadth and thickness. Larger fragments, from a quarter to half an inch or more in length, are mostly derived from the metal being wrought upon. Such larger masses, when they penetrate into the interior of the eye, often inflict such extensive injury that the eye is obviously destroyed, whether the fragment can be removed or not. It is, therefore, the injury caused by small fragments which chiefly concerns us in our efforts to save the eye from destruction. Foreign bodies such as these when they pass through the lens do not usually cause much, if any, bleeding into the eye, and for some time afterwards the lens and vitreous may remain sufficiently clear to admit of efficient ophthalmoscopic examination which will often suffice to locate the intruder and thus render its extraction an easy task, if it consists of iron or steel. Fragments which penetrate through the sclerotic are apt to occasion more or less abundant extravasation of blood into the vitreous (a very important diagnostic point if the external wound be very small, since a small particle merely wounding the sclerotic would not cause intraocular hæmorrhage) ; but even then the ophthalmoscope will sometimes discover the position of the foreign body, and the magnet itself may be used to confirm the diagnosis, as in Case V.

The introduction of the small magnet point into the vitreous chamber does not, with proper care, seem to be followed by injurious inflammatory reaction, and although augmentation of existing opacity in the vitreous may follow its use, this soon clears up if there has been no septic infection.

The Operation.—Whenever a fragment of metal, such as can be attracted by the magnet, is discovered in the eye, we have to consider the best means of reaching it. The cases I now report are typical, showing as they do what may be done in three classes of injury :

(*a.*) Where the foreign body is in the anterior chamber.

(*b.*) Where the foreign body is still engaged in the sclerotic, though mostly within the eye.

(*c.*) Where the foreign body is lodged in the vitreous chamber.

Case I.—A healthy man about fifty years of age was struck in the eye with a piece of metal while standing near a blacksmith's forge. Two days later he came to the hospital with the eye very much inflamed and painful, the aqueous cloudy, the iris turbid, and vision reduced to counting fingers at four feet; tension = 1+. There was a small wound in the cornea, near its lower and external margin.

The lens showed no sign of injury, though the pupil dilated moderately with atropine. At the outer periphery the iris presented a localised swelling, in the midst of which a small, dark mass was dimly seen. The excessive reaction in the iris from so small a wound was sufficient ground for the belief that this must be the foreign body in the eye.

The eye was thoroughly cleansed and washed with perchloride solution, 1 in 5000, and then rendered anæsthetic by repeated instillations of a 4 per cent. solution of cocaine; an incision was now made as for an iridectomy at the outer corneal margin. As soon as the magnet was placed in contact with the incision a piece of metal about 3 millimetres in length sprang out of the eye with alacrity. In a few days the eye made a perfect recovery.

Case II.—A man accustomed to do odd jobs about the house was removing an iron hoop from a barrel with a hammer and chisel, when something struck him in the eye. Shortly afterwards his family physician found a foreign body imbedded in the sclerotic near the outer margin of the cornea, but failed to extract it after prolonged manipulation. Two days later, the eye having become inflamed and very painful, he sent the man to me.

I attempted to remove the fragment with a curved needle and with fine forceps, but signally failed, and sent him to the hospital. Here the magnet instantly removed a spicule of metal about 4 millimetres in length, 3 millimetres of which must have projected into the interior of the eye.

Case III.—A healthy young Swedish iron-worker came to my office on account of some dimness of vision five days after a slight injury. There was evidence of a small wound in the sclerotic, now healed about 6 millimetres from the lower and inner margin of the cornea. Vision 6/12. With the ophthalmoscope I discovered a small, bright scale of metal floating as nearly as possible in the centre of the vitreous. Having sterilised and cocainised the eye in the usual way, I detached the conjunctiva over a small area at the seat of injury and made a meridional incision about 6 millimetres in length, then fixing the eye with forceps held in one hand, while Dr. Birkett kept the foreign body in view with the ophthalmoscope, with the other hand I passed the point of the magnet towards the fragment. Presently Dr. Birkett said "You have it," and, sure enough, I had. In a short time the eye entirely recovered.

Case IV.—A blacksmith was sent to me about a week after an injury, which had seemed trivial at first, but soon caused great dimness of vision with dark objects floating before the eye.

I found a small wound in the lower part of the cornea, a corresponding rent in the iris, an opaque streak through the lower part of lens, and a good deal of cloudiness in the vitreous, in which I also discovered a shining fragment of metal. After raising a small flap of conjunctiva between the internal and inferior rectus, I made a meridional incision through the sclerotic, passed the point of the magnet about half an inch into the vitreous, and removed the piece of steel without difficulty.

The eye recovered promptly, though vision remained defective on account of increasing opacity of the lens, caused by the passage of the fragment through its substance.

Case V.—This was very similar to the last, except that there was rather more opacity of both lens and vitreous. Among the movable opacities in the vitreous I discovered one especially dense, and suspecting it might contain the foreign body, I applied the magnet to the sclerotic. With each closure of the electric current this darker opacity could, with the ophthalmoscope, be readily seen to make a distinct movement towards the magnet and sink down again when the current was opened. This was proof positive that the opacity contained the piece of steel.

A similar procedure to that in Case IV. resulted in its immediate extraction.

Here, too, recovery ensued with no other complication than the increasing lenticular opacity such as we nearly always see after small wounds of the lens.

Case VI.—The last case upon which I operated was one in which I could not locate the fragment of metal, though the history made it probable that the foreign body consisted of iron or steel. The wound occurred while the young man was working with hammer and chisel on the interior of an old boiler, and the scleral wound, though small, was attended with a good deal of blood extravasation into the vitreous. The operation failed to remove the foreign substance, and the eye having become sightless, soft and very sensitive, I performed an operation last Saturday. The foreign body, which you see here, appears to be a hard compound of sulphur and carbon, coated on one side with oxide of iron, and it is only slightly amenable to magnetic attraction. This was very likely the reason why the operation failed to remove it.

This result does not score against the usefulness of the magnet in suitable cases, but it is an apt illustration of the difficulty in making an accurate diagnosis, not as to the presence of the foreign body, but as to its nature.

In testing the attracting power of the magnet on small fragments of steel in vitreous humor and water, respectively, I always found that the attraction was exerted through a greater distance in the former than the latter. I do not know the explanation of this, to me, an unexpected phenomenon.

CLERGYMAN'S SORE THROAT.[1]

BY

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In using this pseudonym as the title of my paper, the intention is not to confine it to the two diseases, follicular pharyngitis and chronic laryngitis, commonly included in that ambiguous title, but to take that larger circle which will include the many varieties of disease producing sore throat to which clergymen are liable. I know that in doing so I may break one of the ordinary rules of medical nomenclature. It will, however, be for the simple reason that throughout this broad Dominion there are many medical men who, although enjoying large and lucrative practices, are only occasionally consulted by clergymen for throat disease, and it is highly necessary to look beyond the simple manifestations of pharyngeal or laryngeal trouble to get at the origin of the evil.

That the term "clergyman's sore throat" is both inappropriate and unscientific is proved by a comparison of the views of prominent authors upon the subject of chronic follicular pharyngitis, with which, as I said before, the former term is said to be identical.

Morell MacKenzie, in his issue of 1880, tells us that the majority of cases of follicular pharyngitis occur in adult life between the ages of 25 and 35 years, the larger number being males and voice users, clergymen being among the number, in their case the disease being entitled "clergyman's sore throat."

Sajous, in his work of 1888, says that follicular pharyngitis is found particularly among people of middle life—the old not being by any means free from it, and ministers being frequently the victims.

Seiler, in "Diseases of the Throat," published in 1889, accounts clergyman's sore throat as an entirely different malady. According to his view it is a form of chronic laryngitis. He says the symptoms are identical with those of ordinary chronic laryngitis, but the cause widely different, being a faulty use or abuse of the voice, congestion of the vocal cords with attendant soreness, hoarseness being the result.

Bosworth, in his elaborate edition upon the throat in 1892, says that follicular pharyngitis undoubtedly commences in early life, and that among adults it occurs far more frequently among women than men. As for the term "clergyman's sore throat," it is not even mentioned by him, probably on account of its ambiguity and unscientific meaning.

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[1] Read before the Canadian Medical Association at Montreal, August, 1896.

Hence, having no definite and distinct meaning, being ignored by some writers and differently defined by others, it would probably be better if both physicians and laymen would for the future consider the term obsolete. I hope, too, to add emphasis to this idea by the remarks I may make in reference to the distinct diseases, which patients suffering from so-called clergyman's sore throat have really been afflicted with.

It is now an acknowleged fact, well understood by the profession generally, and particularly emphasized by laryngologists, that the large majority of cases of chronic throat disease have their origin in nasal or naso-pharyngeal obstruction of one kind or another. Wherever we have nasal stenosis we have oral breathing, leading to throat irritation and other attendant evils. Voice users, of which perhaps clergymen are our most representative class, often suffer from this cause ; and the soreness experienced in the throat, is naturally referred to by them as the disease itself, instead of the effect of disease situated in another organ.

During the ordinary act of respiration the nose, when in a normal state, performs a three-fold duty : 1st. It cleanses the air from impurities, as it passes through the vibrissæ, and over the ciliated epithelium. 2nd. It heats the air to a blood temperature by the time it reaches the naso-pharynx on its way to the lungs. 3rd. It saturates the air by the moisture thrown out as serous exudation by the venous sinuses of the turbinated bones. The nose can only perform this triple function when normally open enough to allow of free nasal breathing : and it is only of recent years that the importance of air saturation before reaching the naso-pharynx has been sufficiently recognized. The researches of Ashenbrandt, Kayser and Bosworth have established the fact beyond dispute, that the venous sinuses of the turbinated bones discharge by transudation from 12 oz. to 16 oz. of serum per diem for the definite purpose of saturating the air passages downwards. The venous sinuses discharge this fluid either by the tubular mucous glands of Zuckerkandl or by the minute serous canals of Chatallier, probably by both, as many believe the two to be identical. However that may be, the turbinated bones alone possess these venous sinuses and tubular canals, and consequently no other bodies can effectually perform their functions. The posterior pharynx is not supplied with this intricate apparatus for irrigation ; and when nasal breathing is cut off from whatever cause, the small amount of moisture in the throat is immediately picked up by the air in breathing, leaving the mucous membrane in a parched condition and producing to some extent the soreness of which clergymen so often complain.

Let oral breathing once become established, particularly when from any cause the voice requires to be used in an unusual degree, and follicular pharyngitis is one of the most frequent results. Thick, tenacious mucus will be secreted in the throat, with the resulting screatus to clear the parts of the viscid substance. Sometimes too, the palatal muscles are brought into such constant action, in the effort to procure relief, that the uvala becomes elongated and thickened. From its newly acquired size, it in turn becomes a foreign body on the tongue and induces efforts of unavailing deglutition.

Another effect, not by any means unfrequent, arising from this abnormal pharyngeal exposure, is catarrhal and follicular tonsilitis, with enlargement and hardening of these bodies. Still another result of obstructed nasal respiration, particularly so with clergymen, is hyperæmia of the vocal cords, accompanied by hoarseness, soreness and catarrhal secretion.

It is quite possible that these symptoms may sometimes arise from reflex action of the sympathetic and pneumogastric nerves, caused by an abnormal condition of the stomach and other digestive organs, and in which the nasal respiration is free and unobstructed : but the fact remains, that the majority of chronic throat affections, particularly in clergymen, owe their origin to nasal obstruction of one form or another. Hence, it should be our duty in every case. to examine the nose and naso-pharynx thoroughly, before concluding that the throat disease had its origin in the pharynx *de novo.*

I shall conclude by briefly detailing the history of a number of cases of throat disease in clergymen, the majority of whom were referred to me by medical confreres. A number of these, on presenting themselves, made the statement that they were suffering from clergyman's sore throat. Out of about 25 cases, whose records are found in my case books, I have selected 10 to report to you, inasmuch as all of these differ materially from each other in certain subjective features; while in regard to throat symptons there was in many respects a general resemblance.

Case I.—June, 1890. Rev. A. W., of T., æt. 57. Has some soreness of throat with slight hacking cough. On examination. I found hypertrophy of left inferior turbinated at the anterior extremity with a large flat polypus behind it. The throat was catarrhal and the uvula elongated. On enquiry, I found that uvulotomy had been performed several years before ; but that the constant irritation of the throat arising from nasal obstruction and voice usage had produced a second hypertrophy. The treatment consisted in removing the polypus and turbinal hypertrophy, followed by excision of the redundant portion of the uvula. He has preached twice a Sunday ever since and has had very little throat trouble from then until now.

Speaking of uvulotomy, it may be laid down as a general rule, not to excise more than half that organ, no matter what its length may be.

CASE II.—Aug., 1891. Rev. E. W. B., of C., æt. 40. Has been preaching for many years. Throat commenced to trouble him about a year ago; he thought from preaching three times each Sunday. Was under professional treatment, but two months ago his voice gave out, and he was compelled to cease preaching. The rest during that period had failed to relieve the hoarseness and soreness. On examination, I found the posterior end of the septum enormously thickened, producing partial nasal stenosis, although there was no turbinal enlargement. This, owing to the resultant oral breathing, had produced chronic pharyngo-laryngitis. Follicular granulations, however, were absent. Galvano-cautery operations removed the septal thickening. Spray treatment of the throat followed, and in a few weeks, his voice being restored, he resumed his ministerial duties. Two years later the septal thickening returned. He came to Toronto and it was again removed in like manner. One month ago he again came to my office, this time after an interval of three years, as soreness was returning. This time instead of cauterizing I curetted both sides of the post-septum. Once more he is practically well. This is a peculiar case, the singularity being in the repetition of severe attacks of catarrhal hypertrophy of the posterior end of the septum.

CASE III.—Sept., 1891. Rev E. W. P., of S., æt. 49. This was a case of the old classical clergyman's sore throat. The nose and naso-pharynx were in a normally healthy condition, so the origin of the trouble could not in this case be laid at their door. But the post-pharynx was covered with granulations and the uvula elongated. The treatment consisted of uvulotomy and galvano-cautery touching of the granulations followed by mild throat sprays. I believe he has had full use of his voice ever since.

CASE IV.—May, 1892. Rev. D. McL., of A., æt. 35. Has been a minister for six years. In early life had asthma. This disappeared as he reached manhood, being followed by foul nasal catarrh. This ameliorated somewhat, but for the last four or five years he has had hay fever every summer. Frequently of late he has had sore throat, with hoarseness and difficulty of articulation. On examination I found hypertrophy of right inferior turbinated, with deflexion of septum to right; also hypertrophy of posterior end of left inferior turbinated. Throat catarrhal, but no granulations present. Relief was given and nasal stenosis removed by galvano-cautery operation, followed by spray treatment. In this case the operative treatment entirely removed the tendency to hay fever. This is a reasonable conclusion to arrive at, as he has had no return of it from then until now. This summer I removed a part of the right deviation of septum from him. His voice is always good and he performs his ministerial duties regularly.

CASE V.—Nov. 1892. Rev. W. P. B., of U., æt. 44. He says that voice and throat had been troubling him for seventeen years. Is often hoarse and cannot sing now. He says that pieces of bone were sawed out of each nostril several years ago, giving partial relief.

On examination I found a thickened catarrhal condition of mucous membrane extending down from naso-pharynx to larynx. Vocal cords were congested. The chief nasal trouble was a dislocated columnar cartilage. This almost completely filled the right anterior naris, producing stenosis on that side, and presenting an ugly appearance. Bosworth, in his recent work, recommends the removal of the whole columnar cartilage in cases of this kind. This I did not consider necessary, but excised the major part of it. The healing, though tedious, was perfect, and had a better æsthetic effect than it would have had if the whole had been excised. The throat symptoms soon yielded to local treatment, and he informed me recently that although he occupied his pulpit regularly his voice still continued to be clear and resonant.

CASE VI.—May, 1893. Rev. W. O., of M. M., æt. 36. Since January has been troubled with hoarseness and post-nasal catarrh, for which his doctor had given him a solution of chloride of zinc, to be applied with a swab twice a day. He told me that his wife had faithfully followed out the instructions by scrubbing it hard each time. For all that it would not get well. Examination.—Post-pharynx had a glazed and tanned appearance and seemed to be denuded of mucous membrane. Uvula was twisted to one side and elongated. Post-septum was thickened and there was a large spur on the anterior end of left side. Treatment.—Removal of obstructions and deformities by operation and the subsequent use of spray of albolene to nose and throat. Patient was in a short time enabled to resume his clerical duties.

CASE VII.—Sept., 1893. Rev. Prof. M. C., of T., æt. 60. Has sub-acute laryngitis with soreness and hoarseness. Examination.—Post-pharynx covered with granulations, also partial stenosis on right nasal passage owing to pressure of long ridge spur on right side of septum. Removal of ridge by saws and touching granulations with galvano-cautery at intervals relieved the symptoms. Spray of albolene was used for some time, and he was enabled to deliver his regular winter course of lectures without difficulty.

CASE VIII.—March, 1894. Rev. Mr. H., of U., æt. 40. Has had huskiness of voice and weakness of vocalization for a year. Not much soreness, but a good deal of throat expectoration. Pulse 82, respiration 22, temperature 100°. On examination of the chest anteriorly nothing unusual; posteriorly, in right intra-scapular region, prolonged expiratory murmur and increased vocal resonance. Breathing through left nostril very difficult, owing to presence of large septal ridge. Larynx filled with muco-pus, particularly left side. Under cocaine I removed the ridge from septum. On spraying out the throat I found infiltration in the left hyoid fossa and some abrasion of surface. This was brushed with 33 per cent. solution of lactic acid, followed by spraying the larynx with menthol grs. xx. to alboline ℥i. For some time the treatment was repeated daily, followed each time by inhalation of creosote vapor. Internally the treatment consisted of syr. hypophos. co. one drachm three times a day and creosote m.v. three times a day. The removal of the nasal stenosis helped the throat a good deal. He has, however, required to use the atomizer with the menthol solution more or less ever since. Two or three times a year he comes to the city for a few days for more direct treatment than he can personally apply. I am glad to be able to say that for more than a year there has been neither infiltration nor abrasion. The voice continues good, though there is still a little throat catarrhal discharge. Respiration still about 20, pulse 80, but the temperature is normal. Weight does not vary. When we consider that it is two years and a half, since he first came for treatment, and that he is much better able to fulfil his ministerial duties now than he was then, the future is still hopeful for him.

CASE IX.—Jan., 1895. Rev. M.C., of B., at the foot of the Rockies, æt. 46. Has been preaching for 10 years. Soreness of throat commenced five years ago. Since then his voice has lost its resonance, and speaking requires a good deal of effort. There is constant expectoration of thick muco-pus from the throat. Examination—Has large ledge-like spur on left septum. Hypertrophy of anterior end of right inferior turbinated. Also extensive hyperplasia of both faucial tonsils with thickened pharyngeal mucosa and congested vocal cords. By operations all the hypertrophies were removed. This was followed, as in the other cases, by mild soothing treatment of the nose and throat until healing had taken place. Result was a very greatly improved condition, with return of natural strength and tone to the voice. This improved state of his throat has continued up to the present, though he writes that he thinks there is still something yet to be done.

CASE X.—June, 1896. Rev. W. M. K., of M., æt. 54. This case, the last of the series that I purpose referring to, differs from all the others quoted. In appearance the patient is a strong, healthy, vigorous looking man, not past the prime of life. Family history good Has been preaching three times every Sunday for many years and as several of his parishioners were deaf, and he himself had a strong voice, he has always done his best to make them hear. Winter and summer after morning service, he drove five or six miles for the afternoon preaching ; and no matter how warm he was or how inclement the weather, he drove home again for the evening service. For several years his voice has been getting hoarse and this culminated one month before coming for treatment in being obliged to cease preaching. Examination—Nose was normal, also palate, pharynx and tonsils. On using the laryngeal mirror, however, the inner surface of the larynx was intensely congested. The ventricular bands were also thickened, and in attempts at vocalization, completely covered the vocal cords. After applying cocaine, the latter could be partially examined. They were red like beef and the left one was abraded in the centre. No glandular swelling whatever could be found in the region of the neck ; and there was neither odynphagia nor dysphagia. By careful treatment with solutions of silver nitrate and zinc chloride, followed by sprays to the throat, the laryngeal congestion abated. The ventricular bands diminished in size so that the vocal cords could be more easily examined, and some improvement in the latter could be observed. The patient was under observation and treatment for about three weeks, but when he left the ultimate result was still doubtful. Throughout he was directed not to speak above a whisper, an instruction which he endeavoured faithfully to carry out.

The diagnosis in this case seemed doubtful. The age, the intense hyperæmia of the vocal cords, and the abrasion of one of them, all pointed to possible malignancy. While the family history, the vigour of constitution, the absence of grandular enlargement, the freedom from abnormal growth at the seat of disease, the lack of hæmorrhage and the absence of odour, all tended toward a diagnosis of chronic laryngitis. The cause, however, seemed very apparent. Violent and periodic strain of the vocal organ during many successive years had been the primary cause; to which might be added, the necessary exposure to the changing elements which his vocation demanded.

In conclusion, according to old parlance, the ten cases that I have reported might all be called "clergyman's sore throat," while in reality no two were alike, proving the name to be a misnomer. All had soreness and hoarseness in a more or less degree; but these symptoms arose from widely different causes, and in several instances hypertrophies of different kinds were found to exist in the one case.

Briefly to epitomize.—In one there was a large polypus in one nasal cavity.

In one a dislocated columnar cartilage.

In one a twisted and elongated uvula.

In one hypertrophy of the faucial tonsils.

In one ulceration of the hyoid fossa.

In two there were septal ridges.

In two septal spurs.

In two catarrhal hypertrophy of post-septum.

In two pharyngeal granulations.

In three turbinal hypertrophies.

While in only one, and that the saddest case of all, was there entirely uncomplicated laryngeal disease.

NON-MALIGNANT TUMOURS OF THE TONSIL, WITH REPORT OF A CASE.[1]

BY

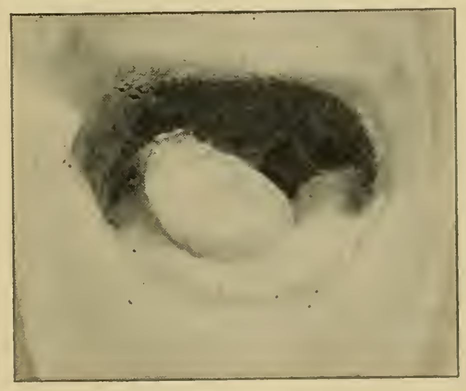
HUBERT D. HAMILTON, M.A., M.D.,

Laryngologist to the Montreal Dispensary, Assistant Laryngologist to the Montreal General Hospital.

Case of lymphangioma of right tonsil in a man 22 years of age —The patient applied for treatment in April, 1896, complaining of difficult breathing at night, for two weeks preceding his visit. Upon examination, a tumour could be seen springing from the upper segment of the right tonsil, by a narrow neck, and disappearing behind the base of the tongue. It was found to be 3 inches long, ¾ of an inch wide by ½ an inch thick, and was somewhat pear-shaped. The colour was pale pink, much like that of healthy adenoid tissue ; the surface quite smooth ; consistence soft and doughy. A large vein coursed over its anterior surface, extending from the anterior pillar of the fauces by a separate pedicle.

The tonsils proper were not unusually large, nor were there any glandular enlargements to be found in the throat, nose, larynx, or cervical region. With a forcible expiratory effort, the growth came forward upon the tongue, reaching almost to its tip.

The accompanying reproduction is from a photograph taken by Dr. D. Patrick, House Surgeon in the Montreal General Hospital, and shows the growth very well.



By swallowing it, the patient could eat and speak without inconvenience.

While singing, a sensation of fulness had been noticed, quite recently, and the voice sounded as if the faucial tonsils were enlarged.

Had it not been, however, for his loud snoring during sleep, and the anxiety caused his young wife by the sight of this supposed "second tongue," it is likely the patient would not yet have been referred for treatment by his family physician.

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[1] Read before the Canadian Medical Association, Montreal, August, 1896.

The general condition was below par. Of inflammatory affections of the tonsils there was no history.

The treatment consisted in tying off the vascular pedicle and burning off the two together, with the electric snare. By the aid of cocaine this was done almost painlessly, and without a drop of bleeding.

Since removal, the general health has improved in a remarkable manner.

Dr. George H. Mathewson kindly made the microscopical examination at the Royal Victoria Laboratory, and reports as follows:

The tumour on examination proved to be a lymphangioma. It is covered by several layers of pavement epithelium, and contains a great deal of fat, this accounting for its softness.

In discussing this rare condition of innocent growths of the tonsils, there are several general considerations worth noting.

The chief interest consists in the recognition of the growths clinically, for when once diagnosed you can generally put aside the fear of serious symptoms or fatal termination.

The symptoms are in fact, almost *nil*, unless the enlargement is sufficient to produce an obstruction to swallowing and breathing. Fatal terminations have then been met with.

Constitutional weakness very often accompanies this affection, and when treated these patients generally make very rapid progress and enjoy a state of health formerly unknown.

From an embryological point of view these tumours of the tonsils should nòt be so uncommon. Still the result of clinical experience proves the comparative rarity with which they are found in a region which marks the union of the two embryonic tissues—the oral epiblast with the intestinal hypoblast. This should be a perfect "hot-bed" for neoplasms.

This contradiction is explained by Dr. Bosworth, in pointing out that it is chiefly during the early period of life that the tonsils easily take on morbid processes, while with advancing age all lymphatic tissues tend to atrophy and even disappear.

This predisposition of youth is well explained in the case reported. The size of the growth became rapidly manifest after marriage. The influence of the sexual system upon the tonsils is very frequently seen in the production of inflammatory troubles; and cases of defective development of these glands are reported in individuals who are also peculiarly developed sexually.

The frequency with which different varieties of benign tumours occur is given variously, according to the collaborator quoted.

The papillomata are held by Dr. C. H. Knight to be the most common form. These growths are generally multiple and pedunculated. Next are mentioned fibromata, cystomata and lymphadenomata. The last named gives much difficulty in forming an early diagnosis, unless other glands are so affected as to bear out the symptoms of Hodgkin's disease. Very rarely lipomata and varicose angiomata are met with.

Mr. Lennox Browne, also writing in 1893, gives lymphomatous formations of the tonsils special mention, afterwards referring to fibromata.

Dr. Bosworth, in 1892, finds fibromata the commonest form and cites records of nine cases from different sources. One case each of the following varieties is also quoted: fibro-chondroma, fibro-lipoma and fibro-lymphadenoma.

Under the heading "Polyp of the Tonsil" are found records of cases by Frühwald, Julia, Koch, Lannois, Lejars and Rivière.

Dr. H. S. Birket, in 1893, reported a case of pedunculated polyp of the left tonsil in an infant of four months. This proved to be of the mucous variety; a rare condition!

Cysts of the tonsil have been observed upon two occasions by the writer. Lymphangiomata, however, are not easily found amongst the records of tonsillar growths.

The treatment of small growths, producing no inconvenience, is unnecessary. But when symptoms of obstruction and pressure appear, the mode of treatment must depend upon the variety, form and situation of the tumour. Ecrasement, hot and cold, is one of the most useful methods.

In some cases, this means has been supplemented by dividing the soft palate or by opening up the cheek.

Electro-puncture is needed in certain forms of growths, while interstitial injection of acetic acid was used with benefit by Sir Morell Mackenzie in a case of lymphadenoma of both tonsils.

RE-ORGANIZATION OF THE MILITIA MEDICAL SERVICE.[1]

BY

W. TOBIN, F.R.C.S., Deputy Surgeon-General, Canadian Militia.

The re-organization of the militia medical service forms an integral part of that general re-organization of our local forces, the need for which every new war scare—and we have had many of them of late in the British Empire—renders more and more apparent.

The scheme of imperial defence throws on us as a self-governing colony the main responsibility of providing for our internal order and security and assisting in our own external defence.

The primary essential principle on which the system of imperial defence is based is British naval supremacy at sea, and on this postulate broad principles have been formulated for the guidance of the colonies in fixing the standard of their defensive measures. It has been laid down that while the imperial fortresses, as well as the principal coaling stations, may become the object of serious attack, no serious invasion by land of colonial territories need generally be apprehended. In the case of Canada, however, separated only by an imaginary boundary line extending some two thousand miles from the neighbouring, not always too friendly, republic, the situation is peculiar, not to say precarious.

Our local defence, till seconded by aid from Great Britain, depends altogether upon ourselves. How are we prepared to meet an emergency?

The local forces are administered, as we all know, by a Minister of Militia and Defence, who, I am glad to say, is at present a member of our noble profession and a military surgeon as well; associated with him is a small permanent department, a branch of the civil government. The forces are under command of a colonel or superior officer on the active list of the imperial service, appointed for five years with the rank of major-general, who is assisted by a permanent headquarter staff.

The present system of medical organization in Canada is that which prevailed in the British service from the days of the Peninsular war till quite recent times—the "regimental system." This system originated with the first Director General, Sir James McGregor, Bart., and replaced a condition of utter medical chaos.

His idea was that every regiment should take care of its own sick and in this way avoid the crowding of large numbers in the general hospitals. It served its purpose at the time and was maintained with various modifications (which we have not adopted) until 1858, when a royal commission sitting under the presidency of Sir Sydney Herbert brought about fundamental changes in the medical service of the British army—the remodelling of the department and the organization of a practical army medical school at Netley Hospital (which is still in existence); these led finally to the abolition of the "regimental system," which was found incompatible with the development of the army medical service. This abolition took place in 1873. The "regimental system," however, survived among the household troops till 1883, when their medical arrangements were assimilated to those of the rest of the army.

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[1] Being an abstract of a paper read before the Canadian Medical Association in Montreal on the 28th August, 1896.

We still retain this antiquated and discredited regimental system in Canada. Our medical department consists of a Surgeon-General at Ottawa (during the Parliamentary session at least), with the scope of whose powers, duties, and emoluments I am not acquainted. He has however no administrative officers under him. During the late rebellion, it is true, the Hon. Dr. Sullivan discharged the duties of medical purveyor to the forces and did the work admirably and without sparing himself. Within the past year five officers having the titles of deputies of the surgeon-general have been appointed, but the Order-in-Council appointing them did not state whether the new rank was substantive or honorary, and as a subsequent Order-in-Council abolishing relative rank and assimilating the titles of medical officers to those of the present army medical staff corps does not include or mention them we are left in as great a quandary regarding their position as before.

In the permanent corps each battery of artillery, each company of the infantry school corps and the school of mounted infantry at Winnipeg has their medical officer and a small regimental hospital. The medical officer is irremovable, wears the uniform of his corps and has in his charge, I believe, a small field equipment.

Throughout the active militia each regiment of cavalry, each brigade of artillery and each battalion of infantry has two medica, officers, a surgeon and an assistant surgeon. Each field battery has its surgeon, and the smaller independent corps, cavalry and infantry are similarly provided. These medical officers, as in the permanent corps, form an integral part of the regiment and wear its uniform They remain in the corps on promotion and may not be detached for duty elsewhere. They have no hospital equipment, of course, and no field equipment but the ordinary field companion and water bottle, carried when on the march by an orderly, and generally full of anything but water. A certain amount of field equipment for the use of the brigade, is, however, stored in each brigade district. I am not aware that it is ever medically inspected as to its condition and fitness for service or that it is under the control of the medical department. At least such is the case in Halifax. I am speaking, of course, only of the active militia, not of the permanent forces.

I need not enter in detail into the arguments for or against the regimental system. Whilst it is still contended (principally by foreign medical military authorities) that some form of regimental sanitary organization is necessary, both in peace and war, in no army except the Russian is a permanent regimental *personnel* and equipment maintained at all times. In the British service, and in most other armies, medical officers are temporarily attached to each fighting unit under arms, who, with the regimental bearers, give first aid to the wounded in the first line of surgical assistance. But in the British service this is the sole attempt at regimental medical organization. In the Continental armies (the French and Swiss for instance) regiments are composed of three battalions and the regimental help is on a larger and more permanent scale. It is, however, a moot question with the best authorities whether the British system will stand the test of further experience and whether its regimental "first aid" may not require to be further extended. But the regimental organization as a general system for peace and war stands condemned and in our service must go. It failed in the Crimea, and in the Mutiny, and notwithstanding frequent modifications was abolished in the Queen's service in 1873. It failed most lamentably in the American rebellion.

Surgeon-General, Sir Thomas Longmore, our principal authority on these matters in Great Britain, writes: "The system of each regiment taking with it a hospital establishment of its own into the field is an impracticable one in a modern campaign. Independently of the waste in a system which leads to an unnecessary multiplication of articles when a less number would suffice, it has become impossible for troops moving in the field as quickly as they now do to take such bulky stores with them." The North-West campaign also demonstrated to ourselves the utter inefficiency of our regimental system on active service.

After the campaign was over I had an interview with the Minister of Militia and Defence and formally advocated reorganization. I again brought forward the question of militia medical reform in a paper entitled "Some Proposed Changes in the Canadian Militia Medical Service," which I read before the meeting of our Association held in Kingston last year. The Society was then good enough to endorse my views and to order a copy of that paper to be forwarded to the Militia authorities at Ottawa.

I have since devoted a large portion of my time to a study of the military medical organization of various continental armies, to that of the United States and to that of the British service. In this study I must acknowledge the great assistance I have had from a series of valuable papers on this very subject of medical reorganization from the pen of Major John Van Renslaear Hoff, Surgeon of the United States Army, read before the Association of Military Surgeons of the United States, and republished in the medical press.

As the outcome of my study on the subject, three schemes for organization appear open to us.

First, the present system in use in the British service which may or may not be shortly modified ; secondly, a scheme similar to that of the Army Medical Department, which I suggested last year; or, thirdly, the system in use in the army of Switzerland, which seems in many ways admirably suited to our people, being cheap and concentrated in time of peace, elastic and expansive in time of war, with a splendidly organized transport service for the sick and wounded, and quite up to the times in the matter of granting substantive rank and purely military titles to its medical officers.

I will not, though I have the material at hand, trouble you with the details of these systems. For many reasons it appears to me that we cannot do better than follow the lines of our home service, modifying that organization to suit our peculiar conditions. But whatever system be adopted, it must be a *sine qua non* that the medical department, in all things medical, (except perhaps transport) should be supreme and autonomous.

It is for you, by a vigorous resolution, to again call upon the Government of this country to set its house in order. Should the Government concur with you that reorganization of the Medical Department is necessary, then it would be desirable that a committee, composed say of the Quartermaster General, the Adjutant-General, and a competent medical officer should be appointed to examine different schemes and select the one most suited to our people, and our finances, and satisfactory to our profession.

SUGGESTIONS FOR RE-ORGANIZATION.

The present British Army Medical Corps system (with modifications adapted to our conditions, social, political and financial) should be taken as the basis of our Canadian medical service.

On active service, in the British Army, a medical officer is attached to each regiment, but only temporarily, and this is the only provision made for regimental surgical assistance. As I have already stated it is a moot question with continental military authorities whether this simple regimental arrangement will stand the test of further experience. In time of peace, there is no provision for a regimental medical service amongst the Queen's troops; trivial cases of illness are seen by a medical officer of the military station, in barracks, and there treated; if they are considered sufficiently serious the cases are sent to the hospital. One proviso therefore should be made an integral part of any scheme propounded, to meet the views of our militia medical *confrères*, namely, that the present medical officers should, if they desire it, be allowed to remain attached to their respective corps. But it is a question for consideration, whether future medical appointments should not made to the department (when organized) and not to any particular regiment.

It would be desirable also that a general Canadian Medical Staff should be formed. This should be an independent body under a medical head, a Director-General, or a Surgeon-General, attached to the headquarter staff of the Canadian Army. He should be a permanent and paid official, who would advise and deal with medical matters under the orders of the Commander-in-chief of the local forces.

With regard to bearer companies, which the Militia Department recognizes as desirable, I would propose that a bearer company and field hospital should be established at the headquarters of each militia brigade, presuming that for fighting purposes their headquarters would be located in some special centre, such as Halifax, Montreal and Toronto, amongst others.

Opportunities for special training and study should be given to militia medical officers as suggested by Dr. Farrell, of Halifax, in his paper read before the Maritime Society last year, and inducements for doing so might be held out to them as regards promotion, etc.

Courses of teaching and training might be established either in connection with the present schools of instruction or in connection with some of the leading schools of medicine throughout the country.

A course of military surgery and hygiene might be given yearly as a voluntary part of the curriculum and examinations on these subjects might be made obligatory upon surgeons seeking appointment to the militia medical service.

In England, where medical officers of voluntary regiments pass the prescribed examination, an additional capitation grant is given the corps to which the officer belongs.

The rank and file of the General Medical Service for employment in bearer companies and field hospitals might be either specially enlisted, or be obtained from the various militia regiments. In Halifax the commanding officers of artillery and infantry have generously offered to provide the men required to form a half bearer company, which will suffice for the wants of the station. For many reasons it would be preferable to obtain men (easily got in districts where medical schools exist) by special enlistment for the hospital corps, but the latter system is cheaper and is that which now prevails in England amongst the volunteers, where men are obtained by transfer from regiments of the brigade to which the bearer company is attached. In England no base or field hospitals are required by the volunteer forces. These establishments would be supplied in times of emergency from the medical staff corps in that country. On active service here we should want them badly and we may be called on when we least expect it, where, I should like to ask you, will we then find them ? I will only repeat the expression of my friend, Surgeon-Major General O'Dwyer: " Medical any more than military organization cannot be evolved in a perfect state at short notice when suddenly required." We may conclude with the aphorism, *Si vis pacem, pare bellum*—If you wish for peace be prepared for war

Society Proceedings.

CANADIAN MEDICAL ASSOCIATION.

Twenty-ninth Annual Meeting, Held in Montreal, August 26th, 27th and 28th, 1896.

This meeting, one of the largest and most representative gatherings of the profession in Canada, was opened on the morning of August 26, by Dr. Roddick, Chairman of the Local Committee, who very briefly gave the visiting members a warm and cordial welcome to the city. In his remarks he referred to the fact that Montreal had been chosen as the next meeting place of the British Medical Association, and that he had been elected as its President for the year. This great honour he did not accept for himself personally, but considered both it, and the fact that the British Medical Association proposed for the first time in its history, to leave its own country and cross the Atlantic to meet in Montreal, should be regarded as a special honour to the whole medical profession in Canada. The speaker briefly outlined the programme for the several sessions, and then introduced the President for the year, Dr. James Thorburn, of Toronto.

After reading the minutes of the previous meeting, a few visitors were introduced, including Dr. Cushing, of Boston ; Dr. Robinson, of New York, and Dr. J. C. Webster, of Edinburgh.

The first business was the calling together of the Committee on Interprovincial Registration, the members of which immediately retired to take into consideration the report of last year.

The first paper presented before the general meeting was one by Dr. C. F. Martin and Dr. G. H. Mathewson, of Montreal, entitled

OBSERVATIONS UPON THE RELATIONS BETWEEN LEUCHÆMIA AND PSEUDO-LEUCHÆMIA.

The writers stated that it was more than probable that no disease could be diagnosed from a blood examination alone. Many of the secondary anæmias showed a blood condition similar to that observed in progressive pernicious anæmia. An examination of blood cells in grave chlorosis had been found to correspond to that found in pernicious anæmia. Sarcomatous growths sometimes induced a cellular ratio which was indistinguishable from that present in a typical leuchæmia. It was therefore impossible, from our present knowledge, to definitely diagnose a malignant condition, unless concomitant symptoms, objective and subjective, were taken into consideration. Some years ago it was also decided that certain differences observed in the blood formed a basis of differentiation between the various lymphogenous diatheses. Recent observations, however, showed that this was not a correct basis. No one could distinguish between the forms of multiple glandular enlargements or the varieties of splenic tumours, for in both maladies the macroscopic and microscopic lesions were interchangeable throughout. Such a variable symptom as leucocytosis could not be relied upon as a basis of classification. Cases which they had observed had shown, both in the acute and in the chronic forms, not only wide variations in the cellular ratio of the blood corpuscles, but in many instances also the condition of the blood had been such as to render absolute differential diagnosis impossible, as so many stages of leucocytosis were met with in the multiple lymphomata, varying from a normal ratio up to an excess of the white over the red cells. It is a question whether those cases recorded by Ebstein and others, where leuchæmia had followed Hodgkin's disease, are really to be looked upon as instances of one disease complicating another, or whether they are not rather to be regarded as the same disease in different forms. Furthermore, the morphological classification of leucocytes has been shown by Gulland, Saxer and others to be an extremely unsatisfactory basis of differentiation, and at present the various forms of granular leucocytes are scarcely sufficiently well differentiated to warrant an examination being accepted as of absolute pathognomonic significance. The tendency then should rather be to revert to the classification of older writers, especially the French, who regarded in "Adenie," or "Diathèse Lymphogène," one general form of disease.

At noon the members were taken by special electric car to the Montreal General Hospital, where a clinic was given by several members of the staff.

CLINIC AT MONTREAL GENERAL HOSPITAL.

Dr. F. J. SHEPHERD presented the first series of cases. The first case was a girl who had suffered from perforated gastric ulcer. The symptoms of perforation were well marked ; there was great pain, tympanites and vomiting, with elevation of temperature and rapidity of the pulse and respiration. The perforation was found in the anterior wall of the stomach about in the line of the œsophagus. Very little of the stomach contents had escaped into the peritoneal cavity. Irrigation was not used, sponging being relied upon to remove the foreign matters. For three days rectal feeding was carried on ; on the fourth day food was given by the mouth. This was two years ago. The patient was now, as could be seen, hearty and well. The operation had been performed by Dr. Kirkpatrick.

The second case was a patient brought to the hospital unconscious on August 4th of last year. He had been bicycling down hill, when he lost control of his wheel and was plunged headlong against the curbstone. On admission he vomited and recovered consciousness, but shortly afterwards became stupid again. There was paresis of the right side. The pupils were dilated. A diagnosis of meningeal hæmorrhage was made and the skull was trephined, sufficient of the bone being removed to trace the artery downwards to its point of entrance through the foramen spinosum, where it was found to be ruptured. The bleeding was profuse, and as the vessel could not be secured, the common carotid was tied, checking the hæmorrhage. At this point the patient was exceedingly weak; pulse 190, respiration 50. There was a little subsequent trouble from venous hæmorrhage, but this was successfully controlled. Patient has perfectly recovered.

Another patient was shown who had received a severe injury in the forehead from the bursting of an emery stone, the internal table of the skull being fractured to a greater extent than the external. The depressed bone was removed and the patient made a good recovery.

The fourth case was a young girl on whom he had performed excision of the ankle for tuberculous disease. He had gouged away the whole of the tarsal bones except the posterior part of the os calcis. He had also removed the ends of the tibia and fibula in the same way. This made a complete window through the place where the ankle-joint had been. The wound had healed kindly and the patient had a fairly good foot. This he considered better than amputation.

The last case shown by Dr. Shepherd was a man from whom he had removed a large epitheloma of the bulbous portion of the urethra. The patient had suffered for many years from stricture and the epithelioma had developed at this point. The case had caused some anxiety, as the man had an enormous hernia on the left side, which a few days previously had become strangulated. The patient was now progressing favourably.

Dr. BLACKADER presented several cases of disease in the nervous system. The first case was a man aged 40 years, who had entered the hospital a short time previously suffering from symptoms of progressive muscular atrophy. The patient had been a soldier in the Riel rebellion and since then had been engaged lumbering in the woods. No specific history was obtainable. Last May he first began to suffer from pains, chiefly in the legs, but shifting to various parts of the body. His complaint on entrance was of loss of power in the arms and sharp pains in the muscles of the trunk. Examination revealed wasting of the thenar and hypothenar eminences, with inability to bring the thumb and little finger together. One was scarcely conscious of his grasp. There was marked wasting in the deltoids with fibrillar twitching on attempted movement. The extensors of the forearm were much weaker than the flexors. The nutrition of the brachial group was distinctly impaired. Pains were complained of in the muscles of the leg and tremor could be noticed in the peroneal muscles, but power was not perceptibly impaired. There is at present a slight tendency to stammering speech.

The second patient was regarded by Dr. Blackader as probably one of disseminated sclerosis, with degeneration in the lateral tract. His gait was spastic and to some extent ataxic. Romberg's symptom was present. Intention tremor was distinctly present in the left, less so in the right hand. The eyes showed a slight amount of nystagmus. Blurring of the vision, not accounted for by any optic changes to be detected by the ophthalmoscope, was complained of, but a diplopia on looking downward, due apparently to paresis of the fourth nerve was present. The deep reflexes were markedly increased and ankle clonus was present. The affection had commenced about two years ago with stiffness in the legs and difficulty in walking. A few months later the left arm became numb, and tremor of the muscles became noticeable. Gradually the patient lost control of his muscles and had to discontinue work a few months ago. The patient had been a brass finisher. The question arose as to whether his employment had had any influence in producing the present condition.

The third patient shown was a child aged four years suffering from multiple neuritis. There was the history of a distinct febrile attack in May, lasting four or five weeks, accompanied by much marasmus. From this it recovered, gained flesh rapidly, and was apparently doing well, when two weeks ago it was again confined to its bed with severe pain in the legs and inability to walk or even stand alone. On examination marked wasting was noticeable in both forearms and legs, and with this double wrist drop and foot drop. There was complete absence of the deep reflexes and tenderness on pressure over the nerves. The affection was quite symmetrical and the pain was persistent.

A patient suffering from lead palsy was then presented, of whom the interesting clinical feature was the extent of the paralysis, involving not only the anti-brachial, but also the brachial, the Aran-Duchenne group and the peroneal group of muscles. The various clinical features of the case were pointed out.

Dr. HUTCHISON presented two patients, the first recovering from a bad fracture of the femur, in which the periosteum had been denuded for several inches. The ends of the bone had been sutured. The second case was one of amputation of the forearm for gangrene, the result of destructive damage to the veins.

Dr. SHEPHERD presented a patient with a cervical rib, and a man suffering from urticaria factitia, who showed his back with the letters C.M.A., distinctly visible ; also several cases of scleroderma doing well under thyroid extract.

Dr. C. W. WILSON presented a patient suffering from flat-foot, in whom he had corrected the position of the foot and used Whitman's plates, the construction and application of which he detailed fully. He also showed a case of Pott's disease.

Dr. G. G. CAMPBELL presented a case of scurvy. The patient, an Italian labourer, had lived for some months on a diet of pork and beans exclusively. Under this he became weak, and on arriving at the hospital, large extravasations under the skin could be seen in various parts of the body, and his gums were swollen, spongy, and bled readily on the slightest touch. Under an improved dietary containing lemon juice, and a large amount of fresh vegetables he was improving rapidly.

At the afternoon session, Dr. MEEK, of London, read a paper entitled,

A REPORT OF THREE CASES OF ABDOMINAL SECTION FOR CONDITIONS COMPARATIVELY RARE.

The first case was that of a young woman, aged 28, single, and with good family history. In September, 1894, she received a blow on the right side of the abdomen which caused much pain. Soon afterwards she noticed about the site of the injury a small lump, which increased in size, but caused no disturbance of the general health till May, 1895, when her menstrual period became irregular. On examining the patient, the doctor discovered the presence of a tumour extending more to the right than to the left, and reaching about an inch above the umbilicus. The tumour was elastic and presented an indistinct sense of fluctuation. On examination by the vagina, the uterus was found in normal position, apparently surrounded by a cystic growth ; the sound passed in, measured 2½ inches. He diagnosed a thick-walled ovarian cyst, and an operation was advised. After opening the abdomen, as the tumour gave a distinct sense of fluctuation, a trocar was introduced, but only a small quantity of fluid was withdrawn. Both ovaries were found to be cystic. The tumour, which was found to be a fibro-cyst of the uterus, was lifted out with the appendages, a wire thrown around the pedicle and the whole mass cut away ; the stump was treated extra-peritoneally. The second case was one of a solid sarcomatous tumour of the left ovary. It was removed with little trouble. The third case was one of intestinal obstruction. The patient had had severe attacks of abdominal colic. He was the subject of inguinal hernia in the right side, and had previously suffered from an abscess in the right inguinal region. The present attack was attributed to an indiscretion in diet. He had been treated by the attending physician with opiates, while to relieve the constipation and nausea calomel, salines and other purgatives had been given, followed by enemata but without effect. On Dr. Meek's arrival he found the patient in great distress. There was slight dulness over the iliac region, and enemata of magnesium sulphate, turpentine and soap suds were ordered to be given. On the following day as the patient was distinctly worse, the abdomen was opened by median incision, and the region of the appendix and sigmoid flexure examined with negative results, but a large obstruction was found at the splenic flexure, consisting of a half twist of the bowel upon itself. This seemed to have been caused by old inflammatory bands in the mesentery. The patient did well after the operation for a few days, when acute mania supervened and the patient succumbed.

Dr. PROUDFOOT then presented a baby with imperforate meatus auditorius externus and deformity of the auricle.

The subject of

OPHTHALMIA NEONATORUM

was discussed by Dr. R. FERGUSON, of London. The doctor quoted European and American statistics showing the prevalence of this disease with and without prophylactic precautions. In 8,574 cases of labour conducted without preventive methods, Howe, of Buffalo, found 8.66 per cent. of cases of blenorrhœal inflammation of the eyes in infants. Since the employment of prophylactic treatment the disease had fallen to 0·65 per cent. The paper then referred to the large number of cases of blindness following ophthalmia. The average was 20 per cent. at least of those attacked. The etiology of the disease was then discussed. The exciting cause. beyond doubt, was the gonococcus. Prophylactic measures consisted in frequent antiseptic douches to be employed in the case of all women with suspicious discharges and the immediate cleansing and treatment of the eyes of the new-born. The use of a 1 or 2 per cent. solution of silver nitrate, as recommended by Credé, was an excellent precautionary measure. The question of treatment was fully described. The best results followed the frequent cleansing of the eyes by careful irrigation with tepid water from a fountain syringe. Antiseptic solutions of bichloride of mercury or boracic acid may be employed after the cleansing. When the active stage was under control applications by a cotton mop of a solution (1 or 2 per cent.) of silver nitrate were of the highest value. The essayist contended that this disease should be classed with those under preventive legislation. He moved that the Association recommend that the Provincial Boards of Health place this disease on the list of contagious diseases. A number of members who spoke agreed with this proposal of Dr. Ferguson's, and his motion carried unanimously.

Dr. HARRISON, of Selkirk, read a paper on

SOME OBSERVATIONS ON THE HEREDITY OF CARCINOMA.

These observations had extended over a period of fifty years in families consisting of a large number of individuals. The Doctor referred to one particular family in which, for three generations, various members had been victims to carcinomatous disease in some part of the body. The Doctor detailed the histories of several cases where the disease had recurred after lying dormant for a long time. One question which his observation had thrust upon him in regard to these recurrent cases, was whether some of the cancer cells had been left from the first operation and remained dormant, or whether the cancerous diathesis remained and subsequent irritation lit up the disease.

Dr. HINGSTON said that the question in his mind was quite unsettled as to whether cancer was hereditary or not. He saw many cases which would lead him to believe it was ; while on the other hand, many patients came to him suffering from cancer, in whom no history of heredity could be made out.

Prof. WESLEY MILLS said that this was one of the most interesting subjects that could possibly attract the attention of medical men. He commended Dr. Harrison's record of observations, and stated that very valuable contributions could be made to this subject by general practitioners if they took notes of cases of disease in which heredity was suspected to play a part.

Dr. CHRISTIE, of St. John, said that it was very uncertain, he thought, whether this disease was hereditary or not. He reported a case of recurrence after 22 years. In this case he had operated on the patient who was 72 years of age, and who afterwards lived to be 94. He said he thought if one life could be saved in a hundred, the surgeon was justified in attempting to operate.

Dr. H. P. WRIGHT, of Ottawa, said that his experience led him to conclude that examples of heredity occurred most often in elderly people. It seemed to him that the longevity was hereditary, not the cancer. He could not refer to any cases of hereditary cancer.

Dr. H. V. **Moore**, of Brockville, said that he seldom saw cancer recur in young people. Probably this was due to the fact that in young women, breasts were often removed where there was no cancer. The greater number of cancers that he had seen seemed to give a history of heredity. He would like to know something more of the relation of cancer to tuberculosis and insanity.

Dr. W. W. **Dickson**, of Pembroke, said that he had come to the conclusion that heredity had some influence in producing cancer ; there was not a heredity of disease, but a hereditary tendency in the system; cancer resulted from a degenerated inflammation in an inherited constitutional condition.

The evening session was opened with the President's Address, which was listened to with much interest by an unusually large gathering. After it was finished, Dr. Wyatt Johnston gave a demonstration on

SOME APPLICATIONS OF ENTOMOLOGY TO LEGAL MEDICINE,

the specimens of which were prepared by himself and Dr. George Villeneuve of Montreal. The paper referred to some observations they had made on the work of Mégnin, on the fauna which inhabit putrefactive bodies during different stages of decomposition. Mégnin had made some remarkable deductions as to the time which elapsed since death in obscure cases by merely being shown a portion of the body, a bit of bone it might be, and examining the forms of life upon it. Their observations had agreed with those of Mégnin. The first period of decomposition might be roughly placed at about three months, in which a body exposed to the air, was attacked by two varieties of flies. First, by the ordinary house-fly, and later, by the flesh fly, but as soon as the fatty acids began to form, these flies took a distaste to the body and left it, then the Dermestes, a species of beetle, were found. After fatty acids were formed, a period of ammoniacal decomposition set in and the body began to liquify ; there was then a period of from four to six months, in which various forms of insects were found. The next period, from the sixth to the twelfth month, is a period of drying, when the body becomes parchmented. It was now inhabited by the acari-mites, species belonging to the same order as the itch insect. Towards the end of this period another set of beetles made their habitat in what still remained—the Ptinus and the Tenebrio. In buried bodies the Rizophagus and the Philontes are found

On Thursday morning the Association resumed proceedings in the large lecture hall of McGill Medical College. Dr. G. P. Girdwood gave a demonstration of the Roentgen rays. Each member who interposed his hand between the fluoroscope and the rays could see the bones of his hand, wrist, or forearm very plainly.

Dr. PRICE-BROWN, of Toronto, then read his paper on

CLERGYMAN'S SORE THROAT,

which appears in full in this number of the JOURNAL.

The Address in Medicine, p. 168, was now read by Dr. GEORGE WILKINS, of Montreal. It was much appreciated and the reader was tendered the thanks of the meeting for his very interesting paper.

A paper entitled

ETIOLOGY AND TREATMENT OF ACNE VULGARIS

was read by Dr. A. R. ROBINSON. The writer said that many men regarded acne as a constitutional disease and the eruption as a local manifestation, frequently a consequence of a developmental period in life, and incurable until youth had reached full manhood. Others regarded the affection as dependent upon functional or structural disease in such organs as the uterus, stomach, liver, etc., the eruption being either the result of reflex action, or the attempt on the part of the organism to remove deleterious substances from the body through the agency of the sebaceous glands. Others held that it was chiefly a local disease. His desire in this paper was to show that in the great majority of cases the disease was essentially a local one, and that in its treatment the local conditions demanded our principal attention. Only in a very limited number of cases does the condition of the general system or of some internal organ play more than a subsidiary part. He held that this affection of the sebaceous glands had as its direct exciting cause the presence of micro-organisms and that the principal predisposing and accessory factors were local abnormal conditions, whilst systemic conditions, except in a comparatively few cases, required only slight attention. The clinical features of the disease were then described and its pathological anatomy thoroughly outlined. Diagrammatic illustrations were given of comedones. The blackhead he held to be due rather to chemical changes in the sebum than to foreign matter. In all the cases he had examined the staphylococcus pyogenes albus was present, sometimes also the aureus, and upon these the suppurative process depended, and not upon the bacillus described by Unna. This latter, which was found in seborrhœic conditions, might have much to do with the hyperkeratosis and comedo formation. In addition to these organisms decomposing sebaceous matter also tended to increase the folliculitis. The treatment, when the disease is fully established, consisted in curetting and emptying the follicles, and in the use of a potash soap and hot water; glycerin should not be used. Care should be taken to have all the soap removed. The application of acids or lemon juice is serviceable in the case of blackheads. To lessen the keratosis resorcin, sulphur, and betanaphtol may be employed. These also acted as anti-parasiticides. Perchloride of mercury is also very effectual, but should be employed in very weak solutions. When boils are present, no matter how fat the patient, cod-liver oil should be given.

Dr. SHEPHERD agreed with the reader of the paper in considering acne as a local affection. In his experience the skin of patients in this country would not stand green soap.

The President then read a telegram just received from Dr. John Coventry, president of the Ontario Medical Association, who had reached Toronto on his way to the meeting but was obliged to return, expressing regret at his inability to be present, and expressing the fraternal good-will of the Provincial Association.

A DEMONSTRATION BY PROF. WESLEY MILLS, ASSISTED BY DR. J. W. SCANE, followed, in which the former showed the results of some experiments on several animals which he had chosen as representatives of different groups; of birds, the pigeon was selected; of rodents, the rabbit; of the carnivora, the dog and cat. From the pigeon the whole of the cerebrum had been removed, yet it retained moderate control of the limbs, being able to flap its wings and fly a short distance. In the dog and cat it was shown that the limb centres were situated near the crucial sulcus. These, although removed unilaterally in one case, and bilaterally in another, interfered but little with the function of the limbs. In the bird, on stimulation of the cortex one can find no motor centre except that which concerns the eye. In the case of the rabbit, the motor centre can be removed with greater immunity than can that of the cat. The cat is less affected than the dog, and so on in the ascending series up to man. Dr. Mills thought that observers should recognize this difference in animals. Had this been done in the past many a heated controversy would have been avoided.

Dr. OSLER, in complimenting Dr. Mills on his demonstration, emphasized the importance of all facts which would tend to make our knowledge of localization in the brain more accurate.

A PLEA FOR THE ELIMINATIVE AND ANTISEPTIC TREATMENT OF TYPHOID FEVER,

was the subject of a paper read by Dr. W. B. Thistle, of Toronto. In his opening remarks Dr. Thistle called attention to what he held to be a misapprehension of facts, owing to which the author of a recent article on typhoid fever made the statement that the eliminative treatment depended on the erroneous idea that the specific bacilli were chiefly confined to the intestine. The same author in his article stated positively that specific bacteria were not present in the intestine until the ninth day of the disease, and pointed out that they were found not only in the intestines, but also in the spleen and other parts of the body, leading the reader to infer that this method of treatment was founded on erroneous knowledge.

Dr. THISTLE stated that on the contrary the most recent researches proved the presence of the bacteria in the intestinal canal before the ninth day of the illness, and purgation, by hurrying the biliary and intestinal secretions out of the system, assisted in the elimination of toxins which were acting as a poison. After thus vindicating his position, the writer outlined the chief points in his method. There was a daily purge of either calomel or magnesium sulphate, and salol was administered as an internal disinfectant. His methods, he said, had been tried in the Toronto General Hospital with satisfactory results, and also in his own private practice.

Dr. WM. OSLER, of Baltimore, admitted that in his book, which he inferred was the unfortunate one referred to, he did state these facts and when the article was written those were the facts so far as known. He favoured elimination of the poison through the skin and kidneys by means of cold baths. The use of purgatives, especially in the doses referred to by the reader of the paper, he considered unsafe.

The members of the Association were then taken by the electric cars to the

HOTEL DIEU,

where they listened to an address by Sir William Hingston

ON DEBATABLE POINTS IN SURGERY.

He stated that he preferred to remove tumours of the nose by the mouth; as a rule he prefers lithotrity to lithotomy, but once he met with a stone which resisted a force of 250 pounds applied by the lithotrite. He does not operate by external opening for stricture. In cancer of the breast he operates as early as possible, and, if necessary, repeats. He does not fear leaving a gland as the return is generally in the cicatrix or muscle. He had operated in one case seven times, and the patient was made comfortable, but died from an irrelevant disease. He still hesitates to acknowledge that theoretical antisepsis is essential to good work. Cleanliness is very necessary, but he thinks antiseptics of little avail.

Dr. D. C. Meyer, of Toronto, then read a paper on

HEREDITARY CEREBELLAR ATAXIA,

presenting his patient and a complete history of the case.

The afternoon session was opened with the Address in Surgery, which was read by Dr. John Stewart, of Halifax (see page 182). A very cordial vote of thanks was tendered to the reader by the members.

The Hon. Dr. D. Marcil then presented a paper in French on

THYROIDECTOMY.

This was a report of the successful removal of a one-sided goitre. The patient afterwards became myxœdematous, and was finally relieved by thyroid extract.

Dr. Shepherd had frequently operated successfully. Those cases in which the tumour could be shelled out were the most satisfactory for operation.

A paper on

ORAL SURGERY

was read by Dr. G. Lenox Curtis, of New York. Physicians and surgeons, he said, were either unable or unwilling to deal with troubles in the mouth due to affections of the teeth. He advocated the teaching of oral surgery in medical colleges.

Dr. Buller, of Montreal, criticised these statements, and considered that the reader of the paper made a poor plea for an unnecessary departure in surgery. Canadian physicians, he was convinced, were quite qualified to deal with this class of affections.

A paper entitled

THE ELECTRO-MAGNET IN OPHTHALMIC SURGERY WITH SOME ILLUSTRATIVE CASES.

was then read by Dr. F. Buller, of Montreal, (page 236) and afterwards discussed by Dr. Reeve, of Toronto, and Dr. Phelp

In the evening the annual banquet of the Association was held in the rooms of the Windsor Hotel. Sir William Hingston presided and among the speakers were the President of the Society, Sir James Grant, Dr. William Osler, Hon. Dr. Marcil and Dr. Roddick.

The session on Friday morning was opened by the reading of the report of the Committee on Interprovincial Registration, by Dr. Roddick. This report was received with more than ordinary interest It was as follows:

" Your Committee beg leave to report that, having examined the present requirements of the Licensing Boards of the several Provinces, with a view to obtaining by mutual concession a uniform standard of matriculation, education, and examination, would recommend the following:

"I. Matriculation—The schedule of subjects shall comprise (1) English language, including grammar, composition and writing from dictation; (2) Arithmetic, including vulgar and decimal fractions, and the extraction of the square root; (3) Algebra, to the end of the simple equations; (4) Geometry, euclid, books 1. 2 and 3, with easy deductions; (5) Latin grammar, translation from specified authors, or of easy passages; (6) Elementary mechanics of solids and fluids, comprising the elements of statics, dynamics, hydrostatics, and elementary chemistry; (7) History of England and Canada, with questions in modern geography; (8) and any one of the three following subjects:—French, Greek and German, the requirements being the same as in Latin.

"Fifty per cent. of the marks in every subject shall be necessary for a pass, and 75 per cent. for honours.

"In lieu of the above will be accepted a degree in arts of any university in Her Majesty's dominions, or from any college or university that may hereafter be recognized, but no matriculation in arts in any university will be recognized.

"II. Professional Education—The curriculum of professional studies shall begin after the passing of the matriculation examination, and shall comprise a graded course in the regulation branches of four yearly sessions of not less than eight months of actual attendance on lectures in each year, the subjects to be anatomy, physiology, chemistry, materia medica and therapeutics, practical anatomy, histology, praactiel chemistry, pharmacy, surgery and clinical surgery, medicine and clinical medicine, including diseases of eye, ear, throat and nose, mental diseases, obstetrics, diseases of women and children, medical jurisprudence, toxicology, hygiene, and pathology, including bacteriology.

"That at least twenty-four months out of the graded four years, of eight months each, be required for attendance on hospital practice, to begin with the second year of study. That proof of attendance on not less than six cases of obstetrics be required.

"III.—Examinations—All candidates for registration in the various Provinces, in addition to having fulfilled the foregoing requirements, shall be required to undergo examination before examiners to be appointed in each of the Provinces by their respective Councils, or by means of assessors, as in the Province of Quebec, or by the delegation of their authority to one central body, as has been done in Manitoba. Each examination shall comprise all the subjects of professional study, shall be both written and oral, and 50 per cent. of the marks shall be required in every subject for a pass. The Committee make these resolutions merely as suggestions for the consideration of the Councils of the several Provinces as a mutual basis of agreement, and request that each report thereon to the next annual meeting of the Association, and also send one or more delegates to represent them at that meeting.

"In order that the Councils may be enabled to consider the question with a full knowledge of the facts, it is desired that each registrar should send to every member of every Council in Canada a copy of the statutes and of the regulations in connection with the Council which he represents."

The report was signed by Drs. R. A. Pyne, R. S. Thornton, Thomas Walker, J. M. Beausoleil and Edward Farrell, representing five of the Councils of the Dominion.

A minority report from Drs. MacLeod and MacNeill, two members of the Committee, was also presented, in the absence of these gentlemen, by Dr. Roddick.

After a brief discussion, the majority report was adopted by the Association, and was ordered to be printed and sent to every member of the different provincial Councils in the Dominion.

On behalf of the Nominating Committee Dr. Roddick also read the following list of nominations, which were afterwards unanimously approved by the Association.

For President, Dr V. H. Moore, Brockville. Vice-presidents: Prince Edward Island, James Conroy, Charlottetown; Nova Scotia, J. T. Black, Halifax; New Brunswick, T. Walker, St. John; Quebec, J. M. Beausoleil, Montreal; Ontario, W. W. Dickson, Pembroke; Manitoba, R. S. Thornton, Deloraine; Northwest Territories, E. H. C. Rouleau, Calgary; British Columbia, D. Hanington, New Westminster. General Secretary: F. N. G. Starr, Toronto (re-elected). General Treasurer: H. B. Small, Ottawa (re-elected). Local Secretaries Prince Edward Island, H. D. Johnson; Nova Scotia, A. T. Mader, Halifax; New Brunswick, G. A. B. Addy, St. John; Quebec, J. G. McCarthy, Montreal; Ontario, W. G. Anglin, Kingston: Manitoba W. H. Smith; Northwest Territories, George Macdonald, Regina British Columbia, A. Weld.

On the suggestion of the Nominating Committee, the city of Montreal was chosen as the next meeting place of the Association, it being thought advisable to meet there in 1897, since the British Medical Association will also assemble there during the summer of that year.

Dr. I. F. W. Ross of Toronto, then read the address on Midwifery, choosing for his subject,

ABDOMINAL AND PELVIC OPERATIONS FOR THE RELIEF OF CONDITIONS INCIDENT TO THE PUERPERAL STATE.

The writer dealt with the subject of fibroid tumours complicating pregnancy. He felt that their degree of gravity varied according to their situation. When fibroid tumours were found in a young married woman, who had never borne children, prophylactic treatment consisted in the removal of the ovaries and tubes. In older women this procedure should also be followed. Several cases were reported, in which abortion had been induced to save the woman. In one case recorded, he had found the removal of the placenta, to be far more difficult than a complete hysterectomy would have been. The literature of the subject was then reviewed. The writer next dealt with pregnancy, complicated by the presence of an ovarian cyst. Where the cyst had become impacted, there was three methods of procedure : (1) An abdominal section on the mother ; (2) mutilation of the child ; (3) puncture of the cyst.

Hydramnios simulating an ovarian cyst with pregnancy was discussed and cases reported. With regard to pelvic contractions in pregnancy, the essayist held that craniotomy and cæsarian section if done early were equally safe to the mother, but not to the child. If done late they were equally dangerous to the mother but not equally dangerous to the child.

The subject of pregnancy and intra-abdominal disease was then spoken of, and a case reported in which a coil of intestine was found strangulated beneath a band. A case of rupture and perforation of the pregnant uterus was then related. In this operation there were two indications : 1. To remove the blood from the anterior of the abdominal cavity ; 2. To drain the uterine cavity and site of the laceration. These he secured by thorough cleansing and then pulling a rope of iodoform gauze through the tear down to the vagina. The patient recovered.

Dr. J. C. WEBSTER, of Edinburgh, then read a paper on the

PLACE OF PESSARIES IN GYNECOLOGICAL TREATMENT (See page 221.)

He was followed by Dr. A. LAPTHORN SMITH, of Montreal, whose paper treated of a somewhat similar subject, and was entitled a report on

ONE HUNDRED CASES OF RETRO-VERSION OF THE UTERUS,

treatment by ventro-fixation and Alexander's operation, with results.

Most of the patients had been seen and examined, not only by himself, but also by other physicians and students attending his clinics, while the few who had not been seen, had been heard from through the physicians who had sent them to him. The results of both operations had on the whole been very satisfactory, with the exception of two cases, in which the ligaments broke, partly owing to their being fatty, and partly owing to the method of operating, which he has since improved; in one of these cases he immediately performed ventrofixation with good results; the other was a complete failure, having declined further operation. In one of the Alexander cases the uterus remained in good position for six months, when it began to fall a little. The failures all occurred among his earlier cases, none having occurred among those operated upon during the last two years. So far no case of hernia had resulted from the operation. The ventrofixations gave even better results than those operated on by Alexander's method. They were performed for the most part upon women who not only had retroversion with fixation but the ovaries and tubes were at the same time prolapsed and bound down by more or less dense adhesions. In many of these also there was laceration of the cervix and perineum with cystocele and rectocele.

The disasters following ventrofixation were two hernias and one relapse, all of which were subsequently remedied by a second operation. At the present time Alexander's operation has no death rate, while ventrofixation, although it has not any death rate in simple non-adherent cases of retroversion, yet it must have a small death rate, at least when it follows the removal of very bad pus tubes.

He had performed both Alexander's operation and ventrofixation for prolapse as well as for retroversion, and as the results were excellent, provided the pelvic floor was at the same time repaired, he much preferred these operations to vaginal hysterectomy for prolapse, an operation which he had performed a few times and found easy, but which he hardly felt justified in doing.

Although several of the Alexander's had subsequently become pregnant, in no case did any untoward accident happen. He had heard that some one on whom he had performed ventrofixation had subsequently become pregnant and aborted, but he had so far been unable to verify it. He was not aware that any of them had even become pregnant. This was probably owing to the fact that he had in most of them removed the tubes and ovaries, while in those in which he had left one or both ovaries, they were diseased und unable to functionate. He was frequently asked which of the two operations he preferred. This was difficult to answer. Alexander's was safe. but he preferred ventrofixation, because it had given him the best results. He would probably continue to do Alexander's operation in young married or marriageable women in whom the ovaries and tubes were perfectly free from organic disease; while he would reserve ventrofixation for women who were sterile or who had marked adhesions and who had suffered so much and so long in spite of treatment that the appendages had to be removed.

In the discussion which followed these two papers

Dr. **CUSHING**, of Boston, said that he had more experience in removing pessaries than in using them. He had not been satisfied with the results obtained from Alexander's operation.

Dr. **GARDNER**, of Montreal, thinks that pessaries are only very occasionally of service. He has abandoned Alexander's operation, but frequently does abdominal hysterorraphy, with much advantage to the patient.

CLINIC AT ROYAL VICTORIA HOSPITAL.

The members were now conveyed by means of a special electric car to the Royal Victoria Hospital. where a clinic was held by members of the staff.

Dr. **JAMES BELL** presented a series of brain cases. The first was a man, aged 29, who, in 1895, had suffered from otitis media, followed by mastoid disease. Dr. Buller had trephined but had found no pus. The symptoms increased in severity, there being intense headache and high fever. After three or four days, twitching of the left side came on. followed by paresis of the left arm. An abscess in the middle lobe of the brain was diagnosed and a small opening was made over this region. The dura was found to be bulging, and on opening it two or three drachms of pus escaped. The opening was enlarged downwards to provide for free drainage. A communication was established between this and the opening in the mastoid antrum which Dr. Buller had made. There was an immediate amelioration of the symptoms, the paresis disappearing at once, and the temperature falling to normal. The recovery was not permanent, and serious symptoms again made their appearance. Dr. Bell then reopened the wound and found a hernia of the brain containing a small abscess. Upon incising more deeply, it was found that the whole temporo-sphenoidal lobe was excavated by a large abscess, from which a considerable quantity of pus escaped. After this the progress was satisfactory, except that a sinus persisted and the patient was discharged. He was re-admitted two months later, having had a convulsive seizure the week before. The sinus was opened and was found to lead towards the cranial vault. It was drained and the patient was discharged in April. He has since been in good health.

The next patient was a boy, aged 12, who was admitted on the 11th May, 1896, suffering from thrombosis of the left sigmoid sinus. Dr. Buller trephined and a cord-like mass was found extending down the side of the mastoid which was thought to indicate an inflammatory area about the mastoid process. It extended, however, and in about forty-eight hours, had reached the jugular vein. This vessel Dr. Bell ligatured below the omo-hyoid. An excision was then made over the mastoid and the clot removed from the jugular fossa. The symptom abated and the patient has since been perfectly well.

The third patient was a girl, aged 6 years. While playing with a revolver she had accidentally discharged it, the bullet entering her forehead. No severe symptoms followed, but on examination under chloroform the bullet was found to have fractured the skull and gone deeply into the brain substance, at least two inches from the surface. Forceps were carefully introduced, but it was found impossible to remove the bullet. A skiagraph was taken of the head and showed the bullet clearly. (The skiagraph was shown to the members.)

Two cases of sutured patella were shown, in both of which the injury was caused by indirect violence. Silk was used for the sutures and the result was excellent. Dr. Bell stated that in recent cases his practice was to use gut sutures.

The next case was one in which a floating body, a piece of free cartilage, had been removed from the elbow joint. Two cases of excision of the elbow were shown. In the first ankylosis had followed a severe injury of the elbow, and the operation had given a useful arm. The other was a case of tubercular disease, and the operation had been followed by paralysis of the forearm, due, Dr. Bell thought, to applying the Esmarck's bandage too tightly. He reported a similar case which occurred in his practice four or five years ago. The lesson was to use a hollow rubber tube or a flat bandage. The next patient was a woman, aged 56, on whom he had done nephrotomy for pyonephrosis. This was followed subsequently by nephrectomy by the abdominal route.

A woman was presented on whom nephrolithotomy had been done and two cases exemplifying Esthlander's operation, in one of which 65 inches of rib had been removed. Another patient had suffered from caries of the lower jaw requiring complete removal of the inferior maxilla.

Another patient was shown on whom the speaker had operated for an immense glandular enlargement in Scarpa's triangle and the popliteal space, with destruction of the skin over the glands. In straightening the leg the popliteal vein had been torn.

The next case was a woman who had suffered from strangulated femoral hernia, in the relief of which he had excised eleven inches of small intestine. Murphy's button was used and was passed on the tenth day. No bad symptoms followed. A boy was shown whose ankle had been excised for tubercular disease, a few months later he had returned to the hospital with a re-appearance of the disease in the bones of the foot when a modified Syme's operation was done He was now suffering from caries of the vertebrae.

The next was a peculiar case in which a diagnosis had not been made. The patient aged 47, had come to the hospital complaining of a swelling in the submaxillary region, which Dr. Bell considered to be secondary to a primary cancer somewhere else. The swelling became less prominent but extended downwards into the cellular tissues in front of the vertebral column. This induced spasmodic asphyxia, probably from pressure on the recurrent laryngeal nerve. Tracheotomy had to be performed and the patient then gained ten pounds. Quite recently dysphagia had set in and brachial neuralgia.

The next patient was a boy who had suffered from multiple osteomyelitis. The diaphysis of one tibia was removed, but new bone had formed.

Next was shown a patient who had epithelioma of the right tonsil involving the right side of the tongue and jaw. A preliminary tracheotomy was done, and at a subsequent operation the diseased portions were removed.

Next was a little girl, 10 years of age, in whom he performed excision of the ankle and removed [three or four inches of the tibia and fibula. The foot was a little unsteady, but he thought it was more useful than a stump.

Dr. JAMES STEWART presented six patients, three males and three females, suffering from intra-thoracic aneurism, giving a history of each. He also showed two cases of multiple neuritis and one of symmetrical gangrene.

The afternoon session was opened by a paper by Dr. J. E. Graham of Toronto, on

THE INFLUENCE OF MITRAL LESIONS ON THE EXISTENCE OF PULMONARY CONSUMPTION.

This paper appears on page 191.

In the discussion which followed Dr. Osler drew attention to the occasional presence of acute endocarditis with pulmonary tubercle and related a case in which a diagnosis of heart lesion had been made but which at the autopsy proved to be acute tuberculosis.

Dr. BLACKADER stated that while he was a resident in the Brompton Hospital for Diseases of the Chest, Dr. Powell had pointed out to him the fact that pulmonary phthisis seldom developed in cases of mitral disease.

Dr. TOBIN of Halifax, then presented a paper on

THE RE-ORGANIZATION OF THE MILITIA MEDICAL SERVICE.

(See page 252).

At the conclusion of the paper, Dr. T. G. Roddick expressed himself as in hearty accord with the scheme outlined by Dr. Tobin, and he proposed a motion which was seconded by Dr. Farrell of Halifax and unanimously adopted, commending Dr. Tobin's scheme to the consideration of the Minister of Militia and Defence.

Dr. J. B. McCONNELL of Montreal, then gave the notes of an interesting case of

TETANY FOLLOWING SCARLET FEVER.

(See page 214).

Dr. F. J. SHEPHERD of Montreal, reported very briefly an excision of the scapula for a myelo-sarcomatous growth which had begun two years previously. Healing was rapid and the patient had good movement of the arm, without drooping.

A paper by Dr. H. L. REDDY of Montreal detailing the successful treatment of a case of

PUERPERAL INFECTION

by the injection of anti-streptococcic serum was read by Dr. Burnett in the absence of the author. Owing to want of time no discussion ensued.

Dr. A. L. DEMARTIGNY, of Montreal, read a paper on

ELECTRIC BATHS AND DYSPEPSIA.

The mode of giving a bath was first explained. The patient is placed in a porcelain bath tub filled with warm water, and the faradic currents applied by means of large carbon electrodes, only one of which is in direct contact with the patient. The doctor first uses a current of 90 to 150 interruptions, applying the electrodes over the abdomen, with the view of acting on the muscular system of the stomach and intestines. Afterwards the general nervous system is stimulated by means of a current interrupted 3,000 times a minute, the electrodes being applied, one on the neck and the other near the sacrum, or sometimes on the feet. The doctor reports the cure of several cases of very severe dyspepsia.

Many cases of dyspepsia are due primarily to some fault of the nervous system, and functional and organic affections of the stomach follow as a sequence. Physicians have long recognized this fact, and in such cases endeavour to stimulate the nervous system by amusements, out-door sports, travelling, etc. Dr. DeMartigny thinks that for those who are unable to avail themselves of such measures, electric baths may prove a pleasant and valuable substitute.

Dr. H. D. HAMILTON, of Montreal, reported the case of a

NON-MALIGNANT TUMOUR OF THE TONSIL

and showed a photograph of it. (See page 251.)

The following papers were read by title: "Sinus Thrombosis associated with Acute Suppurative Otitis Media in Scarlet Fever," by Dr. J. W. Stirling, Montreal; "Cold Air in the Treatment of Pulmonary Tuberculosis," by Dr. Edward Playter, Ottawa; "Early Atrophy of Muscles in Cerebral Disease," by Dr. Frederick G. Finley, Montreal; "Treatment of Otitis Media Purulenta," Dr. A. Proudfoot, Montreal; "Technique of Vaginal Hysterectomy," by Dr. L. Coyteux Prevost, Ottawa; "Actinomycosis," by Dr. J. A. Springle, Montreal.

Hearty votes of thanks were given to the profession in Montreal, to the President and to the Secretary and Treasurer, also the trustees of St. George's Church, and the railroad and steamboat companies.

The President-elect, Dr. V. H. Moore, of Brockville, was then introduced, and the meeting then closed.

THE

Montreal Medical Journal.

A Monthly Record of the Progress of Medical and Surgical Science.

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THE CANADIAN MEDICAL ASSOCIATION.

The twenty-ninth annual meeting of the Canadian Medical Association must be regarded as a most successful one, not only from the number of members who registered, nearly two hundred, a number which we understand considerably exceeds that of any previous gathering of the Association, and from the high standard of excellence which was reached by many of the papers read, but also from the great progress which was made in the important subject of intra-provincial registration, and from the good spirit and harmony which pervaded all the meetings.

We have endeavoured to place before our readers in this number the more important papers discussed, together with a full report, which we are sure will be read with much interest.

THE CARLISLE MEETING.

The Carlisle Meeting of the British Medical Association was a very successful one. Nearly seven hundred members attended and every one went away from Carlisle feeling that the meeting had been a very pleasant one, and that the sectional discussions had been of a high character and instructive.

The profession of Carlisle deserve a great deal of credit for coming to the front immediately after the great London Meeting in 1895 when many larger cities were rather inclined to allow a year or two to pass over and the memory of the great Metropolitan meeting to somewhat fade.

The whole organisation of the meeting was very satisfactory. The reception room was conveniently situated in the vicinity of the sectional and general meetings, and the museums.

The Corporation and citizens of Carlisle seemed to vie with the medical profession in making the meeting a success. Garden parties were arranged for every afternoon and were as successful as the weather permitted.

The history of the city of Carlisle is largely that of the border counties. There are still to be seen remains of an old Roman wall. The country around is full of literary and historic interest. An excursion was arranged to take the members of the Association to the Lake Regions on the Saturday after the meeting had closed. Many members took this trip and all were delighted with it. The scenery cannot be surpassed and the day was perfect.

The museums were well filled and proved to be very interesting' The laity as well as the members of the Association apparently enjoyed the exhibition of patent foods and pharmaceutical compounds. In addition to these, there was an exhibition of the Roentgen rays.

The invitation of the Montreal Branch of the British Medical Association to the parent association to make Montreal the place of meeting for 1897 was put before the Council of the association by Drs. Armstrong and Adami. They invited Drs. J. H. Cameron, A. B. Macallum, Peters, and Doolittle of Toronto, and Dr. H. P. Wright of Ottawa to join them.

After the deputation withdrew the Council decided unanimously to accept this invitation and subsequently at a very largely attended general meeting the recommendation of Council to meet in Montreal, in 1897, was carried by a very large majority. Although the invitation was sent from a branch of the British Medical Association in Canada as must needs have been done, yet it was understood by the members of the association that the invitation really was from the medical profession of the Dominion of Canada.

It will be the first meeting of the association outside the British Isles, and Canada is certainly to be congratulated in being the first colony to receive a visit from that great and in many respects unique association of eminent physicians and surgeons, the British Medical Association.

It is now in order for the medical profession of Canada, but more especially of Montreal, to so arrange for the meeting that it may be one of the most successful, so far as scientific work is concerned of any meeting in the history of the association. It is an opportunity also of showing in a social way our regard and appreciation for many whose names are household words in every doctor's home.

It is understood that the meeting in 1898 is to be held in Edinburgh

SERUM DIAGNOSIS IN TYPHOID FEVER.

The Board of Health of the Province of Quebec desires to call the attention of the medical profession and sanitary authorities of this Province to the fact that bacteriological methods seem likely to afford a rapid and satisfactory method of diagnosis in typhoid fever, which will compare not unfavourably in point of efficiency with the methods now so widely employed for the diagnosis of tuberculosis and diphtheria.

It was discovered by Widal, of Paris, that the serum obtained from the blood of a typhoid fever patient was capable of so acting upon pure cultures of typhoid fever mixed with it as to abolish the active motion so characteristic of that organism in fluid culture media and cause an agglutination of the individual bacilli into large groups or clumps, this change being easily recognizable under the microscope or in culture tubes, and usually occurs within a few minutes. With serum from the blood of healthy persons, or those suffering from febrile diseases other than typhoid, the motion of the bacilli is not arrested, but continues indefinitely when mixed with the typhoid cultures.

The method as originally proposed involved the somewhat difficult and complicated operation of obtaining pure and sterile serum.

It has been found by the bacteriologist of this Board that the fluid obtained by moistening with water a dried drop of blood gives equally prompt and satisfactory results, even after it has been dried for some days. This modification of the process facilitates materially its adoption in the work of public laboratory diagnosis, permitting a test to be employed in obscure typhoid cases somewhat similar to that which is made in the case of diphtheria, as a drop of blood can easily be sent to a laboratory and examined there. In this way the bacteriologist of the Board was able to diagnose correctly by examination drops of dried blood sent by mail from Montreal to Buffalo, N.Y.,[1] detecting those which came from typhoid cases and those which did not, using no other means than the method described above.

As the subject is a new one, the Board does not feel in a position to state exactly what degree of accuracy may be attained by this method when used for the routine diagnosis of typhoid fever on alarge scale, but in order to test the practical utility of the method, the Board offers to examine and report gratis upon any samples of blood taken and forwarded by physicians of this Province as directed by the bacteriologist. A report will be sent by the afternoon of the day following that upon which the sample is received, and will be communicated by telephone when the telephone address is given.

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[1] During the meeting of the American Public Health Association, held there in September, 1896.

The Board wishes to obtain data upon the following points and earnestly requests the medical profession to furnish any information bearing upon them.

1. The degree of accuracy of the method and the proportion of cases in which a correct diagnosis can be made by the serum test.

2. The earliest period in the disease at which it can be expected; give indications.

3. The length of time for which this reaction persists after convalescence.

4. The existence of any relation between the intensity of reaction with the test and the course of the disease.

5. A study of the nature of the obscure febrile conditions, clinically termed gastric fever, continued fever, abortive typhoid, bilious fever, etc., which from the present standpoint of our knowledge in this subject are classed as typhoid by the sanitary authorities.

It is hoped that those who take advantage of the offer now made by the Board will do all in their power to aid this inquiry by not only carefully filling up the blanks sent with the samples, but by afterwards giving information when possible, as to whether the subsequent progress of the case confirmed the result of the serum test or not, and also by providing, when possible, temperature charts, etc., for study by the officials of the Board.

THE ROYAL VICTORIA HOSPITAL.

It is with great pleasure we record the princely gift of Lord Mount-Stephen and Sir Donald A. Smith towards the permanent endowment of the Royal Victoria Hospital.

They have placed in the hands of trustees securities having a par value of $800,000, which it is expected will yield an income of $40,000 per annum. This sum, together with the interest on $250 000, the amount left from the original endowment of $1,000,000, will place this great charity in a position to do a great amount of useful work in the years to come.

Altogether the founders of the Royal Victoria have contributed about $1,900,000, a very great amount, even in these days of very great benefactions. They have given to Canada an hospital which is admirably fitted in every way to carry on the work required of modern hospitals, viz., the relief of suffering, the teaching and advancement of the healing art. There are very few hospitals anywhere better adapted in every respect to carry out such work.

We have just received the first volume of the second series of the Surgeon-General's Index Catalogue. This valuable work is being continued in another series of volumes, and gives a complete list of titles and authors on all branches of medical science to date. The present volume includes the letters A to Az. All workers in medical literature will find the new series as indispensable as the old. The work is one which should find a place in all medical libraries, and will prove of the highest value in lightening the labours of those engaged in literary work.

NEW BOOKS, ETC., RECEIVED AND NOTED.

Neuritis Complicating Dislocation of the Shoulder and Elbow. By M. A. Veeder, M.D. Reprint from Transactions of the Medical Society of the State of New York.

Curettage of the Uterus, History, Indications and Technique; reprint from the Edinburgh Medical Journal, March and April, 1896. Congenital Teeth, with three illustrative cases; reprint from the Edinburgh Medical Journal, May, 1896. By Jno. Ballantyne, M.D., F.R.C.S.G.

Tylosis Palmæ et Plantæ, with description of two cases, mother and daughter. By Jno. Ballantyne, M.D., and Geo. Elder, M.B. Reprint from Pediatrics, April 15, 1896.

Report upon two cases of Tumour of the Spinal Cord, unaccompanied by severe pain. By Pearce Bailey, M.D. Reprint from the Journal of Mental and Nervous Diseases, March, 1896.

Deformities in the Hard Palate in Degenerates; reprint from the International Dental Journal, December, 1895. Results of Thyroid Treatment in Sporadic Cretinison; reprint from Pediatrics, May, 1896. By Frederick Peterson, M.D.

A Manual of Clinical Diagnosis. By Charles E. Simon, M.D. Lea Brothers & Co.

A Manual of Materia Medica and Pharmacology. By David M. R. Culbreth, PhG., M.D. Lea Brothers & Co.

Food in Health and Disease. By J. Burney Yeo, M.D., F.R.C.P. Lea Brothers & Co.

A Manual of Venereal Diseases. By James R. Hayden, M.D. Lea Bros. & Co.

Ptomains, Leucomains, Toxins and Antitoxins. By Victor C. Vaughan, PhD., M.D., and Frederick G. Novy, ScD., M.D. Lea Brothers & Co.

Notes on the More Common Diseases of the Eye. By Robert W. Doyne, F.R.C.S. H. K. Lewis.

The Ready-reference Hand-book of Diseases of the Skin. By George Thomas Jackson, M.D. (col.) Lea Brothers & Co.

Minor Surgery and Bandaging. By Henry R. Wharton, M.D. Lea Brothers & Co.

A Treatise on Surgery. By American authors. Edited by Roswell Park, A.M., M.D. Vol. I. Lea Brothers & Co.

Disease & Defective House Sanitation. By W. H. Corfield, M.A., M.D., &c. H. K. Lewis.

Braithwaite's Retrospect of Medicine. Vol. CXIII. Simpkin, Marshall, Hamilton, Kent & Co.

The American Academy of Railway Surgeons. Second Annual Report. Edited by R. Harvey Reed, M.D.

A Manual of Infectious Diseases. By E. W. Goodall, M.D., and J. W. Washbourn. M.D. H. K. Lewis.

Feeding in Early Infancy. By Arthur V. Meigs, M.D. W. B. Saunders.

The Treatment of Syphilis. By E. D. Keys, A.M., M.D. D. Appleton & Co.

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Original Communications.

A REVIEW OF SOME OF THE CHANGES IN SURGICAL THOUGHT AND TREATMENT DURING THE PAST THIRTY-SIX YEARS.

BY

SIR WILLIAM H. HINGSTON, M.D.

At the suggestion of two of the ex-Presidents of the Association, Sir William proposed, instead of showing a number of clinical cases, to give an *aperçu* of the more important changes in surgical thought and surgical treatment during the thirty-six years in which he had been surgeon to the Hotel-Dieu hospital.

Brain Surgery was almost a new departure since then; for although practised by the ancients in certain cases, especially in depressed fracture, it was reserved for recent times to locate disease within the cranium by disturbance of function at a distant part, the nearest approach to an exact science hitherto made in any department of the healing art. The speaker had employed trephining many times, using, more recently a large circular saw for the purpose. He had trephined for epilepsy, paralysis, depressed bone and tumour. In the first two, success was occasional; in the two last, the success which followed was sometimes quite beyond his expectation. In no instance, however, had any serious disturbance occurred as the result of the operation.

In the treatment of *nasopharyngeal tumours* he had formerly advocated the German method of cutting through the attachments of one side of the nose, and of turning it over to the other side so as to reach the tumour through the increased space thus afforded; a very

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[1] An abstract of an address delivered at the Hotel Dieu Hospital before the members of the Canadian Medical Association, August 27, 1896.

excellent operation, and one which, carefully performed, left little or no deformity. He had also in the past practised the method of reaching the growth through the superior maxilla. Both these methods he had now discarded. He had several times recently reached large hard masses attached to the basilar process, or to the bodies of the upper cervical vertebræ through the nostrils without dividing them. By introducing the index finger of the left hand into one nostril, and the index finger of the other beyond and above the soft and hard palates, and working steadily till the two fingers meet, the growth may be removed through the mouth. This is not a quick operation nor is it painless to the operator. He was obliged, in some instances, to complete the operation, with the patient suspended by the feet with his head on the floor, when the hæmorrhage threatened to fill the trachea.

In *surgery of the chest* he had noticed very remarkable modifications of treatment. At one time the trocar was used almost exclusively. Afterwards, when antiseptic surgery came into use, microbe-destroying fluids were employed to wash out the cavity. Now we had a variety of methods, adapted each to special conditions. Their use was summarized by Sir William as follows: When fluids in the pleural cavity are recent and are not as yet purulent, the aspirator was indicated, and should be repeated as frequently as may be necessary and so long as the fluid remained non-purulent. When the retained fluid became purulent, he resorted to the trocar, and if the fluid re-formed he made a counter opening, through which he endeavoured to drain the cavity. If that did not suffice, a large incision was made and the chest cavity repeatedly washed out. Should this not prove effectual, he wasted no more time but resorted to excision of a portion of one or two ribs. He had more than once regretted not having resorted to this latter operation earlier in the course of the disease. He had never regretted that he had resorted to it at too early a period. (Sir William here introduced a patient who had been brought into the hospital apparently in a dying condition, thin, emaciated, and suffering from cough, night sweats and an offensive discharge from the side. The removal of about four inches of each of two ribs gave complete and permanent relief. The patient was now stout, fat and corpulent.) Paracentesis of the pericardium was touched upon, and its advantages recognized.

In *Abdominal Surgery* the advances have been so great, and operations so general, that practitioners, not only in large cities, but even in smaller towns and villages and in country districts, perform gastrotomy for one purpose or another. Operations upon the stomach for cancer of the pylorus, or of one of the curvatures have not been very frequent. The typical cases which a surgeon would desire are not those most frequently met with; and the differential diagnosis of each is not always easy, yet surgery has achieved much in this direction. The liver also has been frequently visited, abscesses opened and gall stones removed; and with attention to cleanliness in every detail, exposure of the abdominal cavity to the air seems not to be attended with great risk. To this feeling of apparent safety in entering the abdominal cavity may be attributed, no doubt, the performance of operations better left untouched. Within the later years of the period under consideration, Sir William said a new disease had sprung up, rare indeed, on the other side of the Atlantic, but comparatively frequent here, and in an epidemic form in some parts of the United States. He alluded to appendicitis, a disease which made many persons uneasy lest they might be the subjects of it and others almost pleased that they were the subjects of that somewhat fashionable malady. There is no denying that the disease is not uncommon, and there is no denying that surgical operations are performed frequently. To his hospital, in the past few years have been brought a large number of cases, but in by far the larger number, he did not think it advisable to operate, sometimes even when solicited to do so by the medical attendant. Yet in one instance only had he been disposed to doubt the wisdom of not having operated. In certain cases he would unhesitatingly operate. In those cases in which he did not operate, and they were a large majority, the early and satisfactory recovery of the patient satisfied him that he was right in withholding the knife. When an attack was acute, his usual plan was not to operate at first, but to confine his attention to diminishing the severity of the inflammation. But in recurrent attacks each one becoming more severe, he used the knife unhesitatingly. When an abscess formed, he opened it, but was satisfied with merely opening it, and did not deem it advisable to grope in all directions for the appendix, opening up the adhesions with which nature had walled off the peritoneal cavity. The abscess was opened freely, washed out gently with carbolized water, and packed lightly with carbolized or iodoform gauze. He could not recall a single instance where a case treated in this way had not done well. When, however, the abscess was not walled in (a comparatively rare condition in his experience) and when the appendix was found floating freely in pus, it was his custom to remove it. In this department of surgery, he was glad to find that surgeons had recently changed their views very markedly, and had come to the conclusion not to meddle too much with an abscess cavity. This to him was a matter of satisfaction, as he had all along and almost alone defended the position now being taken by the most advanced surgeons, who had turned back, and not too soon, from a course which he, Sir William, had always contended was dangerous.

Removal of the spleen had been practised in the hospital, but the results were not of a nature to encourage him to resort to the operation, save in those exceptional cases where the local trouble is conspicuous and where the general health is not seemingly disturbed—a condition not generally met with. But if splenectomy could not often be resorted to judiciously, ligature of one or more of the tortuous branches of the splenic artery could be practised before they penetrated the hilus, or when passing along the free border of the organ, and in that way limit or retard the growth of the organ.

Operations on the kidney come quite within the thirty years, and to Canada belongs priority in that direction. His first nephrectomy for tumour, nine months in advance of the Germans, upwards of a year in advance of the French, and two years in advance of British surgeons, was not successful, but soon after an operation for painful dislocation of the kidney and hydronephrosis was successful. He rarely operates for displacement, as attention to dressing and tonifying usually suffice, and the patient becomes accustomed to the *error loci.* Even fixation is usually unnecessary.

On looking over the statistics of *stone in the bladder* he found that the horizon of lithotrity had steadily extended as instruments had reached greater perfection; and no doubt, for the reason that cases of stone were recognized earlier than formerly, the horizon of lithotomy was diminishing in the same ratio. From puberty to the age of sixty was at one time considered to be the period within which lithotrity could be safely performed. The range of time had now been extended in both directions. In the hospital, children only three years of age had been subjected to the crushing operation without inconvenience, and even extreme old age had not proved a barrier to the use of the lithotrite. He had long disregarded the rule laid down by authors of preparing the bladder for the operation. He prepared it by removing the peccant stone which it contained He paid no attention to the presence of pus or leucocytes, nor even to the condition of the kidney under any circumstances. Excessive weakness did not deter him from using the lithotrite. Cutting, on the other hand, gave greater shock than crushing; the latter seldom gave any shock. He always endeavoured to remove all the fragments at one sitting. In washing out the bladder, the method introduced by Mercier in France, and brought to the highest perfection by Bigelow, of Boston, he had used for many years. A long conversation with Bigelow, however, some months before he died satisfied him he had been using unnecessary force in pressing the rubber pump. Now he did no more than merely dimple the rubber gently between the thumb and middle finger. This was sufficient.

He had not had a large experience of the supra-pubic method. He had found the old classical lateral method generally sufficient and satisfactory. Stones of from three to four ounces in weight it might be safer to remove by the supra-pubic method, although he had many times removed calculi of larger size by the perineum. Large calculi, however, for the reasons given were now comparatively rare.

In few departments of surgery had greater changes taken place than in the *treatment of stricture of the urethra.* Formerly, slow, gradual, steady dilatation was generally practised. Some surgeons—not many —practised the *coup sur coup* dilatation of the urethra. Subsequently Syme's method of external division was practised; but unhappily the operation was not confined to those cases where Syme himself would have employed it, and it fell into disuse. Then divulsion was practised, and about the same time internal division; and a great variety of instruments were introduced for the purpose of division. Later still these two improved methods were combined—moderate divulsion and internal division. He had held to the latter method for the past twelve or fifteen years, and when strictures did not yield readily to the bougie, he resorted to the combined method of divulsion and moderate division. He believed he obtained better and more durable results from this method than from any other. The full calibre of the canal was at once obtained, and it was not difficult to preserve it in that state.

He then spoke of *club foot,* and exhibited a patient who had had an exaggerated talipes equino-varus, with excessive arches, of both feet. In one, he had performed tarsectomy; and in the other division of all the soft tissues of the sole of the foot. These operations were both comparatively new, and he was yet undecided to which he should give the preference. His impression was there were cases where one operation would succeed better than another. (In the present case tarsectomy in one foot had been performed at an earlier date and the deformity was completely removed; in the other foot, operated upon by open division, granulation was still going on.)

A patient was then introduced with *ingrowing toenail,* and Sir William took occasion to say that the misnomer had led to a great deal of mischief and to operations that should not have been performed. He had not removed the toenail, for what is called ingrowing toenail, for twenty-five or thirty years. He rarely found it necessary even to resort to the excellent operation introduced by Cotting and Martin, of excising a wedge shaped piece at the lateral aspects of the toe. Recognizing the nail as the sinned against and not the sinner, he came to its relief by leaving it severely alone, putting a little pledget of lint beneath the corners if he could reach them, and in the meantime applying a gentle escharotic, usually a saturated solution of sulphate of zinc. In the course of a couple of weeks the nail, which always refuses to be narrowed to less than its rightful width, would reach beyond the flesh and all troubles would be at an end. In cases of onychia, however, divulsion of the nail had to take place.

He then dwelt at some length on the improved system of *treating wounds*—the attention to cleanliness in patient, operator, assistant, surroundings, etc. He took exception, however, to the use of the spray and had stopped its use. After sufficient trial, his experience of it was not satisfactory. He had put it aside even before Dr. Thomas Keith and other distinguished surgeons had sounded its death-knell at the international medical gathering in London.

He had also discontinued the *use of ointments* in the treatment of ulcers; he had certainly not used them for nearly thirty years, and he could see no excuse for their employment except in inflamed or irritable ulcers (forms of ulcer not often seen in hospitals) where one desired to keep off atmospheric air. When he was a student, ointments were in general use and he rarely saw a clean ulcer in any hospital. Now he never saw a foul one forty-eight hours after its admission.

In *amputations*, *excisions*, *sections*, etc., he had returned, in the past few years, to very ancient surgery, having wounds thoroughly dry before closing them. That was a maxim in ancient surgery, but it had been neglected in recent years; but now again freedom, even from a drop of the patient's own blood outside the vessels, was endeavoured to be secured.

He discouraged, in strong terms, a resort to the knife, to establish diagnosis. He thought it unpardonable. It was one of the opprobria of modern surgery. He contended that a diagnosis, though not always easy, was almost always possible when undertaken with care and patience. During his long connection with the hospital, once and once only had he resorted to the knife before establishing what he believed to be a fair diagnosis. Even during the past few years he had not been able to make up his mind clearly as to the precise nature of the trouble, without long and repeated examinations.

Errors in diagnosis, he thought arose from hurry and inattention to minor details, rather than from a want of capacity in the observer.

He recollected when a patient was under daily observation for weeks, sometimes, before resorting to the knife, and that too after long years of experience. To-day it sometimes happens that men of extremely limited experience are not satisfied if they cannot decide, in the twinkling of an eye, the nature of a malady that the more experienced might diagnose, or they themselves with time. The knife should never be used to unravel the enigma, however puzzling at the moment to the understanding.

Specialism was the outgrowth of the same period and the legitimate consequences of a rapid advance in various departments of the healing art. But while he recognized its great advantages, he thought that individualizing and specializing had, in the period referred to gone almost too far in surgery, as, in his opinion, it had in medicine. He did not dread the work of the specialist who had prepared himself for his particular pursuit by a study of the whole body, and of the functions of its several parts, but he did dread the manipulations of any one who hastily referred all disturbances in the economy to a disturbance of a part within his special occupancy.

DISCUSSION ON SUMMER DIARRHŒAS IN CHILDREN.[1]

DIETETIC TREATMENT.

BY

F. R. ENGLAND, M.D.

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Dr. J. Lewis Smith, in his book on the Diseases of Children, says, "before the New York Foundling Asylum was established, every foundling admitted to the almshouse on Blackwell's Island died, more than 1,000 annually, before the age of two years, from summer diarrhœa." Every practising physician associates summer diarrhœa with improper feeding, impure air and bad hygienic surroundings, hence the disease is often spoken of as the summer epidemic of cities.

The indications for feeding, considering the etiology and pathology, may be discussed briefly as follows :

First. All food is to be withheld for from 18 to 24 hours.

Second. Only bland and non-irritating mucilaginous drinks are to be given for two or three days, something that will be readily absorbed and leave little or no residue for bacteria to develop in.

Third. Gradual return to a proper dietery.

When called upon to attend an infant suffering from summer diarrhœa, entero-colitis, fermental diarrhœa, or subacute milk infection, as the disease is variously called, I believe it is good practice to withhold all food for from 18 to 24 hours, allowing only small quantities of cold sterilized water at frequent intervals. By this means an opportunity is given to clear the intestine of all decomposing and irritating organic matter, thus starving out the intestinal germs which are causing the trouble or replacing them by less harmful ones. The improvement effected within a few hours by this course, where the child has not been long ill, is generally remarkable, and clearly shows that the food is not being properly digested, and can only be returned to gradually, and in small quantities, after carefully deciding what food will likely best suit the requirements of the particular case. It is my practice to abandon milk entirely for two or three days in artificially fed infants. When milk begins to disagree with an infant especially during the hot months of summer, I find it a difficult matter to correct the digestive disturbance if the milk, however carefully prepared and in whatever combination, is continued without interruption. Individual idiosyncrasies must be remembered and taken into account. Some adults we know cannot take milk without suffering from digestive disturbance, and certain infants will thrive on peculiar mixtures which are not adapted to infants as a class. Again many infants will not thrive on that food which nature has provided for them. In the case of twins, without any apparent reason, both infants drawing their nutriment equally well from the same source, one has been known to thrive and grow, while the other atrophied and melted away. The feeding problem has always been a difficult one. Much has recently been accomplished, but there is yet much to be solved before artificial feeding can hope to compete with human breast feeding. Besides idiosyncrasies, much depends upon the circumstances by which the infant is surrounded, wealth or poverty, city or country life, all must be considered in preparing a substitute food and its composition must necessarily vary in a given case under different conditions and at different times.

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[1] Read before the Montreal Medico-Chirurgical Society, June 26, 1896.

Second. At the end of twenty-four hours, when the stomach and bowel has been pretty well washed out by nature, aided perhaps by mechanical or medicinal treatment, a little rice water, egg water, or some equally bland beverage may be allowed ; this may supply only a small amount of nutriment, but it will be absorbed into the blood vessels and tissues, replacing the fluids drained from the system. Such albuminous drinks leave little or no residue in the intestinal canal to undergo fermentation and decomposition ; further the deranged stomach and bowel is afforded rest and given an opportunity to recover its normal physiological function.

Third. When the symptoms have well-nigh disappeared, a very gradual return to feeding is permissible. To begin with, it is important to give nourishment in very moderate quantity to test, as it were, the digestive powers and not over-tax them by over-filling the stomach.

If the child is nursing and the mother's milk has been found to repeatedly disagree, a wet nurse should be secured whenever it is possible. There can be no difference of opinion in this regard, other things being equal, the average human breast fed infant is more likely to live and thrive than the infant fed by any other method. In the great majority of cases, however, where the mother is unable to suckle her child, human breast feeding cannot be secured and we are obliged to depend upon some artificial food as a substitute for the natural nutriment elaborated and secreted so perfectly by the mammary gland. The food substituted, if it is to be satisfactory, must in composition correspond as closely as possible to human milk. The milk of an animal, owing to the strong analogy existing between human beings and animals which suckle their young, is naturally selected as the most desirable of all substitute foods. The milk of the cow is usually employed; it is probably as satisfactory as the milk of any other animal, and it has this important advantage that it can be obtained easily by all classes of people.

Cow's milk differs in composition from breast milk, nevertheless it contains all the elements, though combined in different proportions. Whatever milk is used, to prepare a substitute food, it must be modified to correspond to human milk, and when we begin to modify, it is as easy to change the proportions of the different constituents to a great degree as to a small.

The process of modifying or humanizing cow's milk has been the subject of scientific study and experiment for years. Much still remains to be solved and understood before science can so copy nature as to produce a food which can be depended upon as safe and satisfactory, even if it can not compete with human breast feeding. That a state of perfection has not yet been reached in artificial feeding is evidenced by the great number of artificial foods, new and old, to be found in the market. These foods are now, one and all, denounced by men, in a position to speak, as unreliable and generally wanting in nutritive value if not actually dangerous. They are placed upon the market and advertised by manufacturers incompetent to judge of their merits, and the claims made for them have not been supported by scientific and unprejudiced investigation. Recognizing modified cow's milk as infinitely superior to any of the patent foods, the Walker-Gordon Milk Laboratory was opened in Boston in 1891, the first establishment in the world for the exact modification of milk. Since then other like laboratories have been introduced in other cities and are said to be giving satisfaction. Prof. Rotch has tested the value of this method of feeding in nearly 3,000 cases. In speaking of these laboratories, he says "by their establishment a new era has been entered upon in the province of infant feeding, and one which will enable us to produce results which have never before been obtained." The milk to be modified should be from a herd of cows of a common breed and such as give a moderately rich milk, for the elemental percentages are less likely to vary in the mixed milk of a herd, than in that of an individual, and because any disturbance in the health of an animal would have a less deleterious effect on account of the mixing. The milk should be obtained as free as possible from bacteria and other foreign matter, for it is always much better to prevent impurities from getting into the milk than to try and eradicate them after they have altered its normal composition. Sterilization will destroy bacteria, but it cannot remove toxines or render them inert. The milk to be modified is carefully tested daily by the Babcock milk-tester for the exact percentage of fat which it contains. The cream is then separated by means of a centrifugal separator.

Now with fresh skim milk, known to contain a definite percentage of albuminoids, cream containing a definite percentage of fats, distilled water, lime water and a solution of milk sugar at hand, they can be combined in any proportion desired to meet the requirements of any particular case. The fats for example can be withheld or any percentage added, so can the albuminoids and the lactose. The modified milk is finally sterilized when it is ready for use.

It is not always possible to determine the special form of fermentation present, in a case of fermental diarrhœa, but if from the symptoms and examination of the fæcal discharges acid fermentation is thought to be present, the percentage of fats and sugar should be diminished; on the other hand, if albuminous decomposition be present, the proteids should be reduced to a minimum.

I believe there are cases where, in spite of every precaution, milk will not agree; here fresh meats, broths (chicken mutton or beef) may be given, and all milk withheld. Children a year old or more may have gruels of arrowroot, barley or rice, but commercial baby foods, and preparations of meat must be omitted. With Koumiss, matzoon and malted milk recommended by some for chronic intestinal catarrh, I have no personal experience.

DISCUSSION ON SUMMER DIARRHŒAS IN CHILDREN.[1]

THE MECHANICAL TREATMENT.

BY

DAVID JAMES EVANS, M.D.
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Diarrhœa is but a symptom and is "always dependant on or connected with, surface changes of the intestinal mucous membrane, from a simple catarrh to ulceration." (Jacobi, Therap. of Infancy and Childhood, page 247.)

The mechanical treatment of diarrhœa may be considered under two headings: 1st. Stomach washing or lavage; 2nd. Intestinal. irrigation or enteroclysis.

Lavage or stomach washing was first employed by Epstein, in the treatment of the digestive disorders of children, in 1880. During the past six years it has been gaining ground in this country and is now a very common therapeutic proceedure.

Properly performed lavage is devoid of danger and is more easily carried out in young children than in adults.

It is probably the best and most certain method of emptying the stomach. The apparatus generally employed is the one originally recommended by Epstein, and consists of a soft Nelaton's Catheter, No. 8, 9, 10, connected by means of a short piece of glass tubing to a soft rubber tube, two or three feet long, the distal end of which is slipped over the tip of a glass funnel which will hold two or three ounces of fluid.

A rubber sheet or apron should be provided to wrap about the child and should be long enough to reach a basin placed on the floor.

A gallon of tepid water in a pitcher should be placed within reach. It is advisable to dissolve two teaspoonsful of borax in this, or the same quantity of a mixture of equal parts of bi-carbonate and benzoate of sodium

The assistant should be seated and after loosening all the clothing about the child, should pass her left arm around the child's body, so as to include both arms in her grasp, with the child in a sitting posture on her lap.

The child's head may rest against her shoulder, but should be tipped somewhat forward.

The rubber sheet may be secured about the child's neck, and so arranged as to fall over the nurse's arm and protect her clothing from being soiled.

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[1] Read before the Montreal Medico-Chirurgical Society, June 26, 1896.

The operator sits opposite the child and should wear an apron.

The catheter should then be moistened and the end inserted into the child's mouth, and passed rapidly back to the pharynx and then downward into the œesophagus and stomach without interruption.

If the catheter is not passed rapidly over the pharynx, the child will gag, and perhaps vomit, but if the tube is rapidly pushed down just as the child commences to gag, the contents of the stomach will be forced up the tube and into the funnel.

It is not necessary to guide the end of the tube into the pharynx by depressing the tongue with the forefinger as it is apt to cause the child to gag and vomit, and makes the introduction of the catheter more difficult.

When there is much gas in the stomach it escapes with a loud noise as the catheter enters; its escape is facilitated by holding the funnel well up.

The odour and character of the contents of the stomach should be noted as they pass into the funnel.

After emptying the funnel it may be rinsed out and filled with the fluid from the pitcher, then by gradually elevating the former the fluid runs into the stomach. Then lowering the funnel the fluid is siphoned back into it again and emptied, and the process repeated till the fluid returns quite clear. The introduction of air may be avoided by rapidly filling the funnel as soon as it is emptied.

The flow of the fluid may be interrupted by the child vomiting or coughing or by the eye of the catheter becoming plugged with mucous or curd. It may be necessary to withdraw the catheter to clear it.

The catheter may be inserted too far and by bending on itself, raise the eye above the stomach contents.

If the fluid is run in too rapidly the child holds its breath and turns blue.

If the stomach contains a quantity of thick curds, these may be broken up by repeated washings, or by filling the stomach with fluid; the child will vomit and thus expel them.

There is no danger of perforating the stomach, as Epstein was unable to perforate, or even injure the mucous membrane of the stomach, in some experiments he made on the cadaver of an atrophic infant.

After lavage a small quantity of some medicinal fluid may be left in the stomach if desired.

No food should be permitted for at least four hours afterwards.

In older children, it may be necessary to use a gag in order to introduce the tube ; in such a case a second assistant is required

Or the tube may be introduced through the nose as is frequently done in diphtheritic patients.

Indications.—Where vomiting is severe or uncontrolable, lavage is of great value. It is undoubtedly the quickest and most effective way of relieving this troublesome symptom.

Where it is desirable to rapidly empty the stomach of irritating contents, it is superior and more certain in its effects than waiting for an emetic to act, which may fail, or make matters worse by increasing the irritation.

Lavage is not limited to acute cases but proves of great value in the treatment of chronic diarrhœa in children.

Lavage is contra-indicated in children affected with heart disease, bronchitis or pulmonary disease.

In a few rare cases the tube seems to excite vomiting.

Feebleness does not necessarily contra-indicate it, as it can be carried out without inconveniencing the child to any great extent.

2nd. Intestinal irrigation or enteroclysis has been practised for many years in Germany and America and its value is well established.

It is undoubtedly a most rational and scientific therapeutic method in the treatment of the more severe forms of diarrhœa in children or adults.

The irrigation to be effective must be thorough. The fluid must distend the colon and penetrate to the ilio-cœcal valve, beyond which it cannot be expected to reach.

In order to be effectual, attention to detail is necessary. It is better that the physician should attend to the first irrigation himself or have it done by the nurse under his supervision, so that he may be satisfied it is being properly performed.

All clothing but an under-vest should be removed and the child placed either in the dorsal position with the hips elevated on a pillow covered with a rubber sheet, or it may be placed on its side in a semi-prone position, with the hips elevated in the same manner.

The child is best placed on a table or near the edge of a bed.

A rubber sheet or small Kelley-pad should be arranged so as to conduct the discharges to a pail or bucket beneath.

The apparatus consists of the largest size soft rubber catheter, or a rectal tube of the same size, the end being attached to the nozzle of a fountain syringe, the bag of which should be suspended two or three feet above the patient.

Holt has found from a series of experiments made upon the cadaver, that a pint of fluid must be in the colon at once to thoroughly distend it, for a child of six months, and a quart for a child of two years.

The water should be allowed to flow as soon as the tip of the tube has been inserted into the rectum, to distend the bowel ahead of it, and so facilitate its introduction high up.

The child often strains after the tube has been inserted a few inches, and the water is spurted out or flows rapidly away, though the tube is being pushed up apparently several inches. This is because the tip has been obstructed and has bent the tube on itself and coiled it up in the rectum. Sometimes considerable difficulty is encountered in getting the tube to enter the colon in these cases that strain, and it may be necessary to introduce a small cocaine suppository into the rectum, a short time before injecting.

Difficulty in introducing a sufficient quantity to distend the colon, is overcome by passing the tube up at least eight to ten inches.

The colon can usually be well outlined when distended, though abdominal manipulation may be necessary to aid the passage of the water high up.

Pressure of the buttocks together will insure retention of the fluid in most cases.

After the colon has been filled, the fluid may be allowed to run out, and the process is then repeated till the fluid returns almost clear. At least a gallon of fluid should be used at each irrigation.

When there is much mucus in the discharges, it is well to add a drachm of borax to each quart of water.

The temperature of the fluid should be about 100° F., though in cases where there is considerable fever, ice cold water gives the best results.

In feeble collapsed children hot water is better, but in every case either salt, borax or bi-carbonate and benzoate of sodium should be added to the fluid, as plain water acts as an irritant to the bowel.

The interval between the irrigations varies with the severity of the case. Generally once or twice daily will be sufficient.

Where there has been a great loss of fluid it is well to leave a few ounces of normal saline solution, to which a few drops of liq. opii sed. has been added, in the bowel, after completing the irrigation.

Almost every antiseptic has been used, mercuric chloride (1-10,000) carbolic, boracic, hydrochloric and salicylic acids, quinine, creolin, thymol, etc.

Tannic acid, nitrate of silver and alum solution are recommended. In my opinion these solutions can only be of value after the bowel has been thoroughly cleared out with saline or borax solution.

Tannic acid, 15-30 grains to the pint, is recommended by Vaughan in cases of severe diarrhœa from milk infection, the object being to render inert any soluble poisons which may remain in the colon or come down later from the small intestine.

The use of enemata may be combined with intestinal irrigation in cases of entero-colitis. Four to six ounces of a mucilaginous solution of bismuth subnitrate (ʒss.-℥i) or nitrate of silver (gr. ii-℥i) may be injected and left in as long as possible.

Liq. opii sed. must be added to both the above in doses appropriate to the age of the patients.

Stomach washing, a purgative dose of castor oil or calomel in acute cases, followed by intestinal irrigation to prevent the absorption of ptomains from the large bowel, combined with proper food and intestinal antiseptics, promise the best results in the treatment of all forms of diarrhœa in children.

EXCISION OF THE SCAPULA FOR SARCOMA.[1]

BY

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The operation of excision of the scapula for disease is one of comparative rarity, so much so that I deemed it not unimportant to place on record a case in which I have lately operated. As far as I am aware no case has previously been recorded in Canadian medical literature. Langenbeck was the first to remove the entire scapula for disease in 1855; the patient was a boy aged 12. In 1856 Mr. Syme removed the whole scapula from a woman aged 70, for tumour. Since then the bone has been occasionally removed for disease, but more frequently for injury. As far as my knowledge goes the whole upper extremity has been removed more often than the scapula alone, chiefly because primary disease confined to the scapula is rare. The case related below was sent me by Dr. Wm. Ferguson, of Kingston, New Brunswick, who had made an early diagnosis of the condition.

Mrs. C, married, æt. 33, was admitted into a private ward of the Montreal General Hospital on June 25th, 1896, for an enlargement of the left scapula. She has always been strong and healthy until last winter. Whilst driving a long distance and holding a child in her arms, she felt a severe pain in her shoulder; this pain continued intermittently from that time. Two months before entering hospital she consulted Dr. Ferguson for pain in the left shoulder and also down the left arm. He at that time made a careful examination of the shoulder, but could detect nothing abnornal, so thinking the pain was rheumatic, he prescribed accordingly. A few weeks later the patient had a bronchial attack and was confined to bed, and at this time, when applying remedies to the chest, her sister discovered a lack of symmetry in the scapular regions, and Dr. Ferguson was again called and discovered a tumour below the spine of the left scapula. I saw her a week later and by that time the tumour had become well marked. It was confined to the fossa below the spine of the scapula. It was the size of a closed fist, fixed, firm, non-fluctuating, was not tender and moved with the scapula. Operation was recommended and agreed to.

Operation, June 26th.—After being etherized the left arm was bandaged and the parts about the scapula cleansed. An incision was made from the acromion process to the superior angle of the scapula and continued down the posterior border to the inferior angle. The skin was now rapidly dissected away, and then the muscles attached to the spine and vertebral border were cut through, viz., the trapezius, levator anguli scapulæ and the rhomboids. Here the bleeding was free from the muscular branches of the posterior scapular artery. The scapula was now lifted up and the serratus magnus muscle severed and the vessels secured. To complete the excision of the lower end of the scapula, it was necessary to make a second horizontal incision at the base of the vertical one. The muscles attached to the superior border of the bone were now cut through, viz., infra spinatus, omohyoid and deltoid. The tip of the acromion being quite free from disease, was sawn through leaving the deltoid and trapezius muscles attached. The joint was now opened and the muscles of the axillary border (viz., teres major and minor, latissimus dorsi and long head of the triceps) detached, the end of the coracoid process was cut through with forceps, leaving the attachment of the biceps, coracobrachialis and the pectoralis minor. The long head of the biceps was cut through when the joint was opened. The scapula and the tumour was now removed. The patient lost but little blood during the operation, though there was much oozing, for which a rubber drain was introduced at the lower end of the wound. The patient made an uninterrupted recovery, the wound healing by first intention. A week after operation there was some rise of temperature and a fluctuating tumour felt; this was opened and found to be synovial fluid secreted by the joint, which when removed immediately relieved the symptoms.

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[1] Read before the Canadian Medical Association Montreal, August, 1896.

In two weeks the patient was out driving and left for home well on the 16th of July, but having her left arm in a sling. Dr. Wyatt Johnston who examined the scapula, reported that the tumour was a myeloid sarcoma and confined to the infraspinous fossa.

CHEMICAL RELATIONS OF SOME THERAPEUTIC AGENTS.

BY

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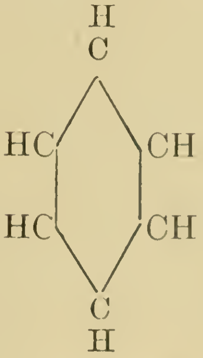
New remedies are being turned out by the aniline works and the great research laboratories of the European continent in such numbers and with such complex formulæ that one is quite bewildered.

The constitution of many of them is indeed complex, but when orientated, their relations are not so remote as might appear from their ordinary formulæ.

It is also interesting to note in many cases that the addition of a certain group, not in itself having any distinctive therapeutic qualities, will impart decisive characters to a nucleus like benzene. Unfortunately this is not always the case, for if it were so, we could with certainty predict the therapeutics of any product which we might synthesize.

An endeavour will be made in this paper to point out some relations existing between drugs in common use by the profession.

Most of the coal tar drugs and the alkaloids may be laid more or less remotely to the derivatives of three compounds, benzene, pyridin and quinoline. Benzene has a formula which is expressed according to Kekulés hypothesis as The hydrogen atoms are of course replaceable by any equivalent group. The effect of these groups on the benzene nucleus will be taken up. The homologues of benzene, toluene the xylenes, mesitylene are without special therapeutic qualities. If, however, we introduce hydroxyl — O — H we immediately change the hydrocarbon into products of definite antiseptic power.



Thus the placing of this group once into the benzene nucleus gives us phenol ; so, according to position, if two hydrogen atoms are replaced we get resorcin hydroquinone and pyrocatechin, all of which are distinct antiseptics, though in a less degree than phenol.

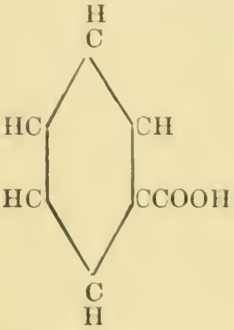
The homologues of phenol, the cresols, cumol, thymol and carvacrol all owe their marked germicidal qualities to the hydroxl which form part of their structure. So also *a.* and *b.* naphthol not derivatives directly of benzene, but of naphthalene are hydroxyl compounds.

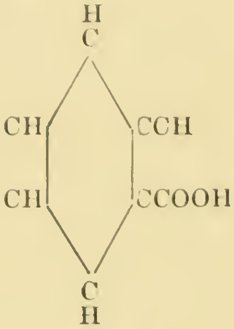
Even when combined with other groups this property is seen.

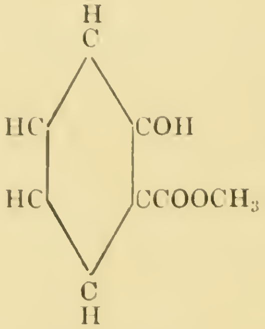
When carborxyl C O O H is introduced we get benzoic acid. If now the ortho-hydrogen atom is replaced by hydroxyl, salicylic acid is formed capable of very much greater antiseptic action than benzoic acid—and indeed it may be said that the greater number of antiseptics in the market to-day, if not containing a hologen like iodine, owe their properties to a hydroxyl group.

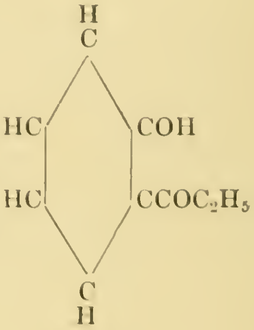
Two compounds which are closely allied to salicylic acid are oil of wintergreen and salol.

The former is the methyl ester of salicylic acid while the later is the phenoyl salt. The relationship of these with benzoic acid may be expressed as follows :

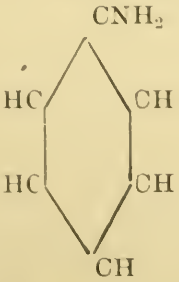

Benzoic Acid.

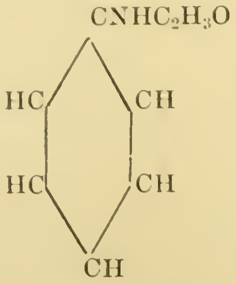

Salicylic Acid.

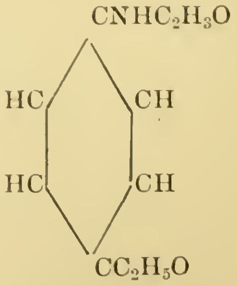

Oil of Winter Green.


Salol.

On introducing an amide group into the benzene ring we form anilin. Although anilin and its homologues the toluidins and xylidins are toxic, no therapeutic use has been made of them except in rare instances. The introduction of an acetyl group produces the important antipyretic acetanilid. By still further adding to this molecular arrangement an ethoxy group in the para position relative to the acetyl group we obtain phenacetin, so that the relations of anilin acetanilid and phenacetin are

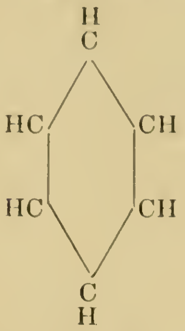

Anilin.

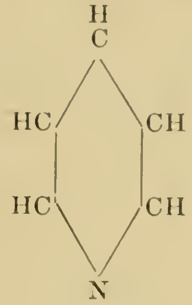

Acetanilid.

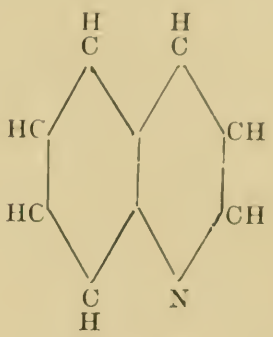

Phenecitin.

Perhaps the most interesting compounds from a theoretical point of view are the bases pyridin and quinoline, both of which have been used to some extent of late in therapeutics. These bases, although of simple structure, give rise, under the numerous synthelical operations to which they have subjected, to substances which in every respect are entitled to the rank of alkaloids, and in fact quite a number of alkaloids have been made by taking them or their homologues as a starting point.

Pyridin itself may be represented as benzene with a C H. group replaced by a nitrogen atom, while quinoline is a combination of the benzine and pyridin nuclei. Thus

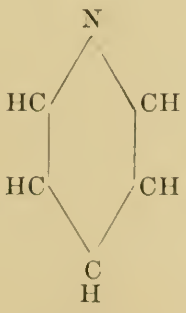

Benzene.

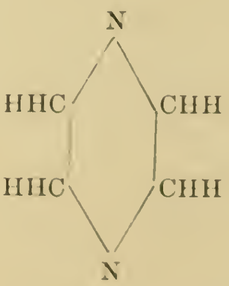

Pyridin.


Quinoline.

Pyridin itself has a marked action on the respiratory system and is used in the spasms of pertussis and asthma. The alkaloid nicotin also belongs to the pyridin group, consisting as it does of six atoms of hydrogen united to two pyridin radicales. It is hexa-hydro-diphyridyl. It possesses the same therapeutic properties as pyridin, but in a much greater degree.

A drug closely allied to pyridin in its chemical constitution, although not therapeutically, is piperazin. Piperazin contains another nitrogen atom replacing the para CH group with the addition of four hydrogen atoms. Thus


Pyridin.


Piperazin.

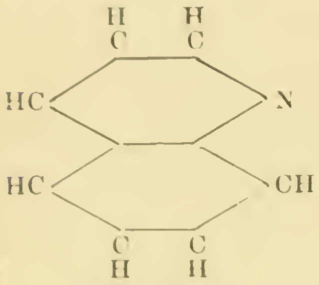
Chemically it is a diamine, diethylene-diamine.

Although pyridin presents a close relationship with some of the alkaloids, it is when one combines the two radicles of benzene and pyridin to form quinoline as shown above that one gets products which to a great extent are alkaloid in character.

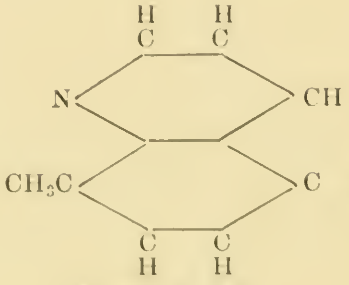
Quinoline itself, the basis of this group, is an oil of which one mode of preparation is especially noteworthy, namely, that of Gerhardt who first isolated it in 1842, and who made it by the distillation of quinin in cinchonin and strychnin with alkalies. Quinoline itself in the form of a tartrate is used in medicine, and has been found to have antiseptic properties. Kairin which is of interest as being the first synthetic substitute for quinin. Kairolin and thallin are quinoline substitution products with febrifuge and germicidal properties. The action of these products though great in lowering the bodily temperature, has not been satisfactory owing to untoward effects on other centres.

As pyridin increases in effect by condensing two nuclei to form dipyridyl derivatives so quinoline appears to do so also.

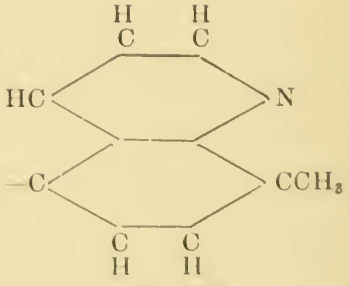
In 1891, Ruttan (*Trans. Roy. Soc. Can., III., vi., 92*) prepared a body having a formula $C_{20}\ H_{16}\ N_2$ and which bore the following relation to quinoline.



Quinoline.



Dimethyl *Bz*.



Diquinolyl.

This body consists, as will be seen from its spacing, of two methylated quinoline nuclei. On examination by Stewart and Ruttan (*Ibid*) it proved to possess exceptional antithermic properties in doses of a decigram per kilo body weight reducing the temperature 3.1°C, (5.6°F). It was interesting because it was the first substituted disquinolin prepared whose constitution was thoroughly established and because of its relation to quinin and the group of quinin alkaloids.

Dimethyl *Bz* Diquinolyl	$C_{20}\ H_{16}\ N_2$
Quinin	$C_{20}\ H_{24}\ N_2\ O_2$
Cinchonin	$C_{20}\ H_{24}\ N_2\ O$
Quinonin	$C_{20}\ H_{26}\ N_2\ O_2$
Chinin	$C_{20}\ H_{22}\ N_2\ O$

Quinin itself has been partly proven to be a hydrogenated diquinoline. It is of interest to note that two isomers of quinin have been prepared by Kohn and by Wallach and Otto both of which had antipyretic qualities, but in a lesser degree than quinin itself.

The constitution of morphin and of strychnin is somewhat complex, but one finds that the introduction of a methyl group into strychnin and into morphin is attended with diminution of their toxic power. In the first we have the comparatively innocuous methyl strychnin; in the second the production of codein. The introduction of a second methyl group into codein, however, increases the effect of codein not only to a nerve poison but to a muscle poison.

All through the range of natural alkaloids there are relations of extreme interest such for instance as lead to the partial synthesis of cocain, eczomin, of caffein, and the relations of such alkoloids as aconitin to benzoic acid and to aconine and pseudoaconitin, but such would lengthen the paper beyond its proper bounds. Suffice it will be to say that it is only by the closest attention to chemical relations that we can ever hope to supplant by laboratory methods the syntheses which are performed in animal and vegetable life.

A DEMONSTRATION OF PROFESSOR FLORENCE'S IODINE REACTION FOR SEMINAL STAINS.[1]

BY

WYATT JOHNSTON, M.D., MONTREAL.
Lecturer on Bacteriology and Medico-Legal Pathology, McGill University.

The test for the presence of semen universally recognized by the courts, is the finding of one or more perfect and entire spermatozoa of the size and shape characteristic of human spermatic fluid. No chemical reaction hitherto discovered, has been found of any value for this purpose.

The objections to the spermatozoon test as the sole means of diagnosis are two-fold: First in genuine seminal stains the spermatoza are difficult to recognize when present, and there are in most of the objects which ordinarily are subjected to this examination numerous bodies which so closely resemble spermatozoa as to deceive any one not having great personal experience in such examinations.

In old stains upon linen, etc., it is so extremely difficult to separate the spermatozoa from the fibres of the cloth without injury, that hours of work may be needed to demonstrate the presence of a single perfect spermatozoon.

Second, where the stains are not due to semen the microscopic method does not afford a ready means of excluding them, since even after prolonged and futile efforts one still feels that further search would lead to their detection. The absence of a ready means of excluding stains which are not spermatic has been the cause of a large amount of wasted labour among medico-legal microscopists. It is therefore with pleasure that one learns of a new test, by Prof. Florence of Lyon, claiming to be a means of promptly recognizing the *probable* spermatic nature of a suspected stain and as promptly excluding those which are due to pus, mucus and other organic fluids.

Prof. Florence recommends the use of a solution containing, Iodine 2·54 grams, Iodide of Potassium 1·65 grams, Water 30 grams, making what he calls a sort of tri-iodide compound of potassium, though this is not a definite chemical salt. When a drop of this is brought into contact with a moistened fibre from a dried seminal stain, and examined under the microscope, there immediately appears an abundant precipitate of brownish rhomboid crystals which are well described by saying that they closely resemble haemin crystals in appearance.

These crystals are readily soluble in acids and fixed alkalies, also in alcohol, ether and benzol, and sparingly soluble in water. They disappear on warming the specimen gently and reappear on cooling, so that they are sometimes difficult to obtain in very warm weather, unless the reagents and instruments are cooled. The smallest trace of a seminal stain will produce a very large number of crystals, the number obtained from a single fibre being sufficient to fill the microscopic field to an extent, which makes it difficult to recognize the individual crystals.

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[1] Given before the Montreal Medico-Chirurgical Society, June 26th, 1896.

Prof. Florence claims that the crystals are abolutely distinctive of human semen, and that they are not obtained by testing stains produced by blood, pus, nasal mucus, vaginal mucus and secretion from the urethral glands. I have tested stains produced by these materials and find his statement to be correct. He also states that he has not been able to obtain the crystals in testing with the semen of the various domestic animals. This statement I have not yet had an opportunity of testing.

I have obtained this reaction typically from a seminal stain one year old, on cotton, in a museum specimen. In this stain the spermatozoa were abundant at first but now can only be seen with great difficulty, whereas the iodine reaction always reacts so promptly that I use the specimen by preference for class demonstrations. Thus these crystals fulfil admirably the requirements of a preliminary test for seminal stains and especially by their extreme delicacy and rapidity enable other stains to be promptly excluded.

From my experience, I consider the reaction of great value as a preliminary test for the probable presence or absence of seminal elements in suspected stains.

It is well not to decide hastily as to exactly how far we can justify M. Florence's statement, that the obtaining of his reaction typically, together with the debris (as separated heads and tails) of spermatozoa affords satisfactory proof that a given stain is the result of a seminal ejaculation, and that the presence of this reaction even where spermatozoa are not subsequently discovered, makes it probably of that nature.

M. Florence recommends the employment of a solution of crocein for staining the spermatozoa. This brings out characteristic details in the heads recognizable under a 1-12 oil immersion, and as it does not tinge cotton and linen fibres, duly enables the spermatozoa to be readily recognized when still clinging to the fibres. He recommends prolonged maceration (two hours or more) and subsequent teasing of the filaments in preference to scraping or squeezing the fibres. His re-action certainly offers a valuable safeguard against miscarriages of justice, due to the error of mistaking purely extraneous matters for spermatozoa.

A CASE OF SO-CALLED ACUTE HODGKIN'S DISEASE.

(From the Medical Clinic of the Royal Victoria Hospital.)

BY

George D. Robins, B.A., M.D., and John F. Argue, M.D.,

Resident Physicians, Royal Victoria Hospital.

In a recent number of the Montreal Medical Journal, Drs. Vipond and Martin described briefly, "A Debatable Case of Hodgkin's Disease," whose main features consisted of a clinical history and a morbid anatomy so closely bordering both on conditions found in Hodgkin's Disease and the typical symptoms of leuchæmia, that it was not found possible to decide definitely under which of these two diseases the case should have been classed.

It would seem from a careful perusal of the literature on the subject, that such cases are being more and more described, and that several authors regard the two conditions as of similar origin.

In his classical work on leuchæmia and pseudo-leuchæmia, Ebstein records one case of acute Hodgkin's Disease which he has evidently regarded as being unique ; and inasmuch as it has been our fortune to observe in the Royal Victoria Hospital a case which, though somewhat similar, yet, so far as we know, differs in certain respects from any hitherto described, it has seemed worthy of special attention ; and we are again indebted for our material to Dr. A. E. Vipond, in whose practice the case occurred, and through whose kindness the patient was allowed to enter the hospital.

J. T., a young Canadian, aged 19, was admitted to the medical wards of the Royal Victoria Hospital on August 6, 1896, complaining of weakness, dizziness, and persistent nose-bleeding.

He had enjoyed good health up to July 1, 1896, when, for the first time, he observed an unusual weakness after his day's work was done, and further, that dull headaches and occasional attacks of giddiness supervened in the evenings. His appetite failed and his face assumed a distinct pallor. To these symptoms were added slight bleedings from the gums and a vesiculo-pustular eruption on the skin on the hands and face. On July 15 he noticed for the first time a swelling under the jaw, and that his condition was becoming progressively and rapidly worse. The pallor, weakness, anorexia and mental stupor increased, and on August 3 a marked epistaxis occurred, necessitating plugging of the nares.

He was seen about this time by Dr. Vipond, who reported his condition somewhat as follows :

Patient is a well-nourished, but very anæmic young man. His expression is dull and apathetic, though his intelligence is fair. There is slight œdema of the lower extremities. On the face and hands there is a pronounced pemphigus. The left lower extremity presents the usual signs incident to an old infantile anterior poliomyelitis. All the lymphatic glands of the neck, those in the occipital region, the axillæ, epitrochlear region and the groins are distinctly enlarged. They are all fairly movable and some slightly tender, but the skin overlying them shows nowhere any evidence of inflammation.

Temperature, 102$\frac{2}{5}$° ; pulse, 100 ; respirations, 24.

Digestive System—There is distinct anorexia and some constipation, The abdomen is slightly distended. The spleen is distinctly palpable below the ribs for a distance of about one centimetre, but its dulness is somewhat masked by stomach tympany. The liver is not palpable.

Respiratory System.—Patient has a harsh cough unaccompanied by expectoration. There is slight dulness over the second and third interspaces close to the sternal margin, evidently from enlargement of the retrosternal glands. Except for the presence of coarse breath sounds there is no evidence of pulmonary disease.

Nervous System.—Apart from the above described apathy and the symptoms incident to the poliomyelitis there is no abnormality.

Urine is normal.

The examination of the patient was further carried on after his admission to the hospital.

The *Blood* showed the following conditions: 3,160,000 red corpuscles, 8,000 white corpuscles, and 42 per cent. hæmoglobin.

The *Urine* on the first examination was faintly alkaline and presented a trace of urobilin. In other respects it was normal.

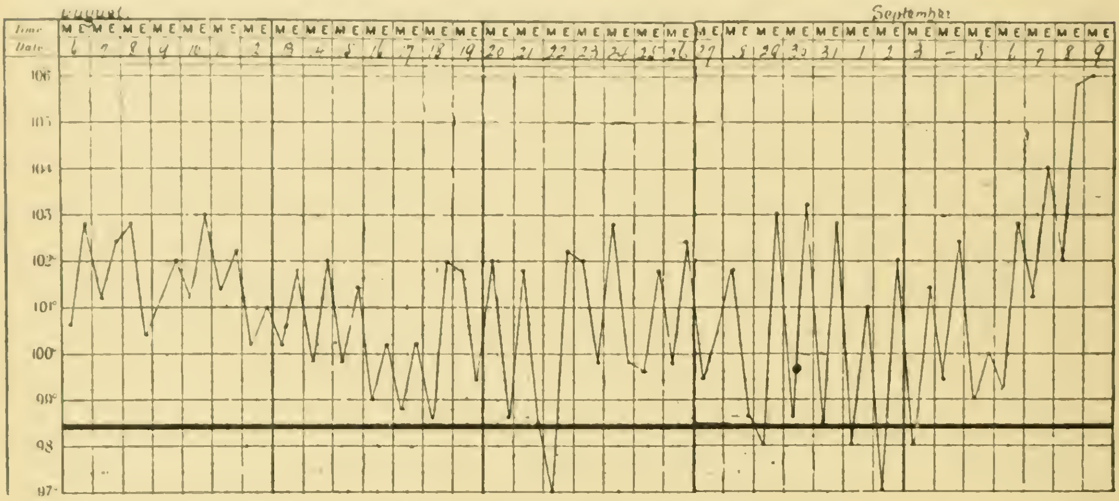
The *Retina*, as examined by Dr. Buller, was found to be œdematous and presenting a few hæmorrhages in the outer granular layer.

Diary.—After his admission to the hospital the patient lived but five weeks, and careful examinations of the blood were made on almost every alternate day, with a view to ascertaining the variations that might occur in a case resembling so closely that described by Ebstein as Acute Hodgkin's Disease.

As will be seen from the appended chart, there was an almost inappreciable variation in the estimates of the white blood cells during the twelve days following his admission, though the red cells and the hæmoglobin were both considerably diminished. During this period the temperature maintained a markedly remittent type, but the general condition was distinctly improved in every other way, and by the twelfth day the temperature had reached almost to normal.

On the following day there was a marked change. The temperature rose abruptly and assumed throughout the rest of the disease an intermittent type. The leucocytosis rose rapidly, and within one week reached 66,600 per cubic mm., the red cells at this time numbering 2,000,000, In other words the proportion of white cells to red was as 1 to 3. Stained blood specimens, prepared by Dr. R. B. Shaw, showed the leucocytes to be mainly of the lymphocytic variety.

The condition then at this time would, according to Ebstein and other German authorities, be regarded as one of leuchæmia, and for one week the condition remained practically such, and the general condition of the patient indicated progressive weakness. The glandular enlargement became more pronounced, the general asthenia was more marked, hæmorrhage supervened from time to time, and in addition a left-sided pleurisy was superadded as a complication.



Died at 6.15 a.m. on September 9.

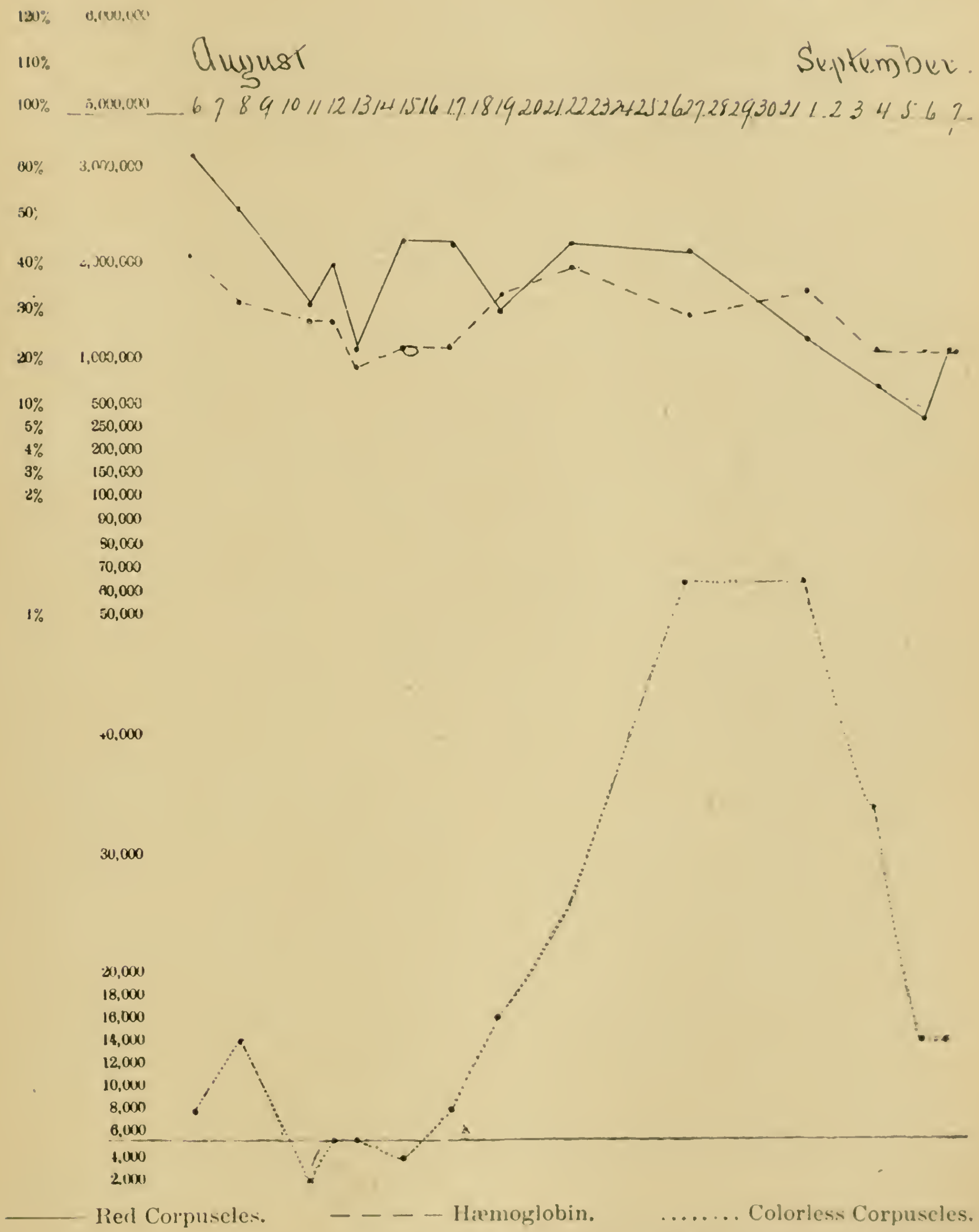
The last week of the patient's illness again was characterized by a most notable change, and one which renders the condition of especial interest. For, during that whole period the leucocytosis became persistently less, and on the day previous to his death the number of white cells to the cubic millimetre was only 14,000. In other words, the symptoms of the last week of the patient's illness were none other than those of Acute Hodgkin's Disease.

The day before death there was slight bleeding from the gums, followed later by an epistaxis, which was readily checked by plugging the nares. Diarrhœa developed 36 hours before death.

At no time during the extreme leucocytosis was there any increased uric acid found in the urine, though during the week following upon the subsidence of the leucocytosis there was a distinct increase throughout.

An autopsy was not permitted.

J... T........



Here then again, as in other cases with which we have met, the difficulty arises in discriminating satisfactorily between Acute Hodgkin's Disease and Acute Leuchæmia.

On the one hand we must recognize the fact that in the course of Hodgkin's Disease there may be a time when marked leucocytosis occurs, and yet we know on the other hand that in leuchaemia there is a marked variation from time to time in the degree of the leucocytosis. Nor in this case do the specific types of white cells afford an idea as to the nature of the malady, for in each case there may be mainly lymphocytes present. So far as the presence of excessive uric acid in the urine is concerned, authorities no longer concur with Eichhorst in regarding the symptom as a criterion for differential diagnosis.

From the clinical signs generally one might be urged to place the disease at once among the acute leuchaemias according to the classification recently adopted by Fraenkel, in which that malady is to be diagnosed not only, nor even mainly by the rapid course of the disease, but rather by the early appearance of all the main symptoms, enlargement of glands, asthenia, hæmorrhage, etc ; and yet in his remarks the differentiation from Acute Hodgkin's Disease is not discussed.

CHART SHOWING RELATION OF LEUCOCYTOSIS TO PRESENCE OF URIC ACID IN THE URINE.

DATE.	RED CORPUSCLES.	HÆMO-GLOBIN	WHITE CORPUSCLES.	URINARY SEDIMENT.
Aug. 6..	3,160,000	42 %	8,000	Amorphous urates and phosphates.
" 8..	2,590,000	32 %	14,000	Amorphous urates.
" 11..	1,630,000	28 %	2,000	None.
" 14..	1,700,000	20 %	5,000	Few triple and amorphous phosphates.
" 18..	1,900,000	27 %	12,000	Triple and amorphous phosphates.
" 20..	1,550,000	32 %	16,000	Ammonium urates, amorphous phosphates.
" 22..	2,315,000	40 %	26,000	Mucus.
" 24..	2,250,000	35 %	40,090	Amorphous and triple phosphates.
" 27..	2,190,000	30 %	66,000	None.
Sept. 1..	1,265,000	35 %	66,600	*Crystals of uric acid*, amorphous urates.
" 4..	707,000	22 %	34,000	*Crystals of uric acid*, amorphous urates.
" 6..	440,000	22 %	10,000	*Abundant crystals of uric acid.*
" 7..	1,210,000	22 %	14,000	*Abundant crystals of uric acid.*
" 9..	....	....	....	*Very abundant uric acid*, ammonium urates.

RETROSPECT
OF
CURRENT LITERATURE.

Medicine.

Clinical Demonstration of Bacillus of Typhoid.

G. Pollak. "Über den Klinischen Nachweis des Typhus-bacillus." —*Centralblatt für Innere. Medicin*, August 1, 1896.

Writing from the clinic of Prof. R. v. Jaksch, in Prag, Dr. Pollak reviews a few of the various methods used in demonstrating the bacillus of typhoid fever, and gives the results in twenty cases in which Elsner's method, somewhat modified, was applied. This method, for clinical purposes, he strongly recommends.

The difficulty in demonstrating the presence of the bacillus in question arises, as is well known. from two causes, viz., its likeness to the bacterium coli, and the immense number of other micro-organisms in the intestinal tract, one of which, as pointed out by the writer, the bacillus fæcalis alcaligenes, in form, in movements, in reaction under staining fluids and in colony formation, presents like features with the bacillus of typhoid.

It may be differentiated, however, according to the reaction obtained in litmus whey. The whey is rendered turbid by the bacillus fæcalis alcaligenes at the end of 24 hours, and at the end of 48 hours it has an alkaline reaction, while the same medium is rendered acid by typhoid bacillus and remains clear, while again the bacterium coli renders the whey turbid and very acid. Turning now to consider the application of Elsner's method, the usefulness and conclusiveness of which, it would seem, is much diminished by the above statements concerning the bacillus fæcalis alcaligenes, Dr. Pollak claims for it a sure and ready method of diagnosis, even when used by those not specially accustomed to bacteriological work.

According to this article under review, Elsner's culture medium consists of 1 kg. of potatoe to 1 litre of water. These are boiled together with gelatine, and 2.5-3 c.cm of $\frac{1}{10}$ normal solution for every c.cm of gelatine acid are added. After filtration or sterilization one per cent. of potassium iodide is added and the medium is ready.

Pollak's method is to inoculate ordinary boullion (3 c.cm) with the stools for examination and then to apply the same over the Elsner culture medium. After 24 hours the larger granular brown colonies of bacterium coli appear, and after 48 hours the brightly shining, finely granular colonies of typhoid bacillus are manifest. Upon the time difference Pollak lays not a little stress. The colonies of typhoid micro-organisms are arranged concentrically and present fine fringe-like edges. The author has taken great care in making control tests in the twenty cases reported upon. It appears from this article that this method does not fully decide the question, Are these reactions due to the typhoid bacillus? And need still exists for yet other tests to be applied in order that the conclusions may be final.

Discussion on Anæmia.

FREDERICK TAYLOR. "A discussion on anæmia: its causation, varieties, associated pathology and treatment."—*The British Medical Journal*, Sept. 19th, 1896.

In opening this discussion in the section of medicine at the sixty-fourth annual meeting of the British Medical Association, Dr. Taylor professed his desire to enter at once upon the obscure, debatable or novel points which the subject presented.

In anæmia the essential feature is a diminution in the total quantity of hæmoglobin, whether it is because of (1) the diminished quantity of blood, (2) the diminished number of red corpuscles, or (3) the diminished quantity of hæmoglobin in each cell.

The variations in plasma and leucocytes are not essential elements of consideration under this term. Secondary anæmias, those in which a cause is recognizable, are excluded, and only such forms sufficient causes of which are not manifest, viz., primary anæmia, occupy the author's attention. Chlorosis, pernicious anæmia and splenic anæmia, are the forms of anæmia discussed.

In his further introductory remarks Dr. Taylor contrasts these two forms, presenting briefly the generally accepted views concerning them, after which he turns to consider the causation of chlorosis, a very debatable point indeed. Nor is there much light upon this part of the subject when the author has ended. Admitting the fact of its great frequency in females and its almost complete absence in males, regarding amenorrhœa as secondary to it, and failing to find anatomical conditions suggested by Virchow in his theory of narrowing of the aorta, (which needs for its assistance as a causative agent the changes of puberty, and which must itself be active throughout life,) he is shut up to the mechanical action of the corset and the extraordinary demands of puberty as active causative agents. Whether the one or the other is regarded as an etiological factor, many links in the chain of complete evidence are wanting, and while it may be complete in some instances, yet these are indeed so rare as to make them fall under the class of coincidents.

The view that chlorosis is due to the injudicious use of the corset is supported by the rest-in-bed treatment, thus all compression of the garments is removed. It is, however, by no means a conclusive point in the argument.

Discussion of the second cause, the extraordinary demands of puberty, throws no light on the subject more than that gained from the fact established by Dr. Lloyd Jones that at puberty the specific gravity of the blood of males becomes greater, while that of females becomes less, and that the fall of density is due to the diminution of hæmoglobin—but why is this? Are the observations made on a corset-wearing people?

The striking characteristics of the blood in pernicious anæmia, viz., the presence of poikilocytes, the great diminution of the red cells, the relatively increased amount of hæmoglobin, are found in all very severe anæmias. Many such cases recover, and by such an event the diagnosis is regarded as wrongly made, for a fatal termination seems essential in establishing the diagnosis.

The position is thus, if the case recover or if by chance or otherwise a cause for the extreme anæmia be found, at once the diagnosis of pernicious anæmia falls to the ground. Be it said, however, that Dr. Taylor pleads for a better basis of diagnosis touching the causative agent, but holds to the fatal tendency.

In the further discussion of this topic the views of Dr. W. Hunter and Dr. Stockman are presented. (Articles setting forth such views are reviewed in Vol. 24 of this JOURNAL, pp. 196 and 972.)

If in presenting the obscure, novel and debatable points in his discussion of chlorosis and pernicious anæmia, Dr. Taylor has shown how obscure and debatable these points are, his presentation of the subject of splenic anæmia shows equal difficulty and obscurity. Splenic anæmia is a disease characterized by anæmia of insidious onset, with marked splenic enlargement, with no leucocytosis, with blood of the chlorotic type, rarely with hæmorrhagic signs, and with a progressive tendency with fatal termination in a period varying from six months to four years. Its pathology is obscure, but the chief changes are found in the spleen, which "presents a kind of sclerosis or fibrotic condition, consisting in atrophy or sclerosis of the malpighian corpuscles and considerable fibrous thickening of the trabeculæ throughout the organ." In some cases there is simultaneous enlargement of the lymphatic organs, and the occurrence of hetero-plastic lymphomata in other organs, as pointed out by Banti, who is disposed to regard primary splenomegaly as a splenic form of Hodgkin's disease.

The remaining part of Dr. Taylor's paper is occupied in discussing the treatment of these three classes of anæmia. In the treatment of chlorosis he lays great stress upon rest, regarding it as of utmost importance in order to secure a cure, while among drugs iron alone is mentioned.

In pernicious anæmia the use of arsenic is well established, and Dr. Taylor suggests that it is possibly due to its antiseptic action. Bone marrow may do good, but how? If pernicious anæmia is due to hæmolysis, any remedy directed toward the stimulation of bone marrow is not given on a correct theoretical basis, since it does not deal directly with the cause of the trouble.

Among the agents employed in the management of cases of splenic anæmia, oxygen and arsenic are recommended, while the operation of splenectomy has been followed in a few instances with good results.

This subject was discussed by several members of the section, the chief topic being the treatment of the disease. Prof. T. Gairdner and Dr. J. O. Affleck emphasized the fact that in pernicious anæma good results often follow transfusion even of small quantities of blood.

Dr. A. Haig claimed that uric acid was always associated with chlorosis, while W. Begley Thorne, M.D., presented his views on the treatment under three headings, treatment by iron, treatment by diet and gastro-intestinal asepticism, and the treatment by the Schott methods. The physical treatment produced its results, he believed, through increase of arterial capacity, improved metabolism and the effectual excretion of uric acid and other toxins.

GRAHAM STEELL, M.D. "On a rare combination of physical signs met with at the apex of certain dilated hearts."—*The Practitioner*, Sept. 1896.

THEODORE FISHER, M.D. (London). "Remarks on the bruit de galop and its causation." *American Journal of Medical Science*, Sept. 1896.

E. M. BROCKBANK, M.D. "Causation of the double first cardiac sound." *British Medical Journal*, June 13th, 1896.

To those who are regularly observing the sounds of hearts, both normal and abnormal, any discussion concerning doubtful and obscure points is of deep interest.

The observers whose names appear above have recorded their views, in part at least, on the not infrequently observed and yet unsatisfactorily explained *bruit de galop,* while Dr. Brockbank sharply distinguishes between this and a double first sound, an explanation of the causation of which is the subject of his admirable paper.

Since the triple rhythm of the heart may be due to a re-duplicated first sound or a re-duplicated second sound, and since the extra sound may be an interpolated one, or one added to the second, and if "interpolated" coming close after the first it may well be termed systolic while, if immediately before the second diastolic, it can be readily understood how confusion has arisen respecting the "time" of the added feature. If there be any applicability in a term, the French have the right idea when in their use of bruit de gallop they refer to that form of triple rhythm of heart sounds which has "special accent and pacing" like the sound of a galloping horse. It is plainly therefore a diastolic phenomenon which produces it, a re-duplicated diastolic sound. This idea prevails among most German authorities. The teaching upon this point is very obscure in the article above named which deals with its causation while the remaining articles clearly teach its diastolic character.

Before summarizing the corresponding views concerning its conditions, etc., under which this bruit is found it may be said that Dr. Brockbank quoting freely from the work of Roy and Adami and amply illustrating his views by cardiac diagrams and pulse tracings suggests the following as an explanation of the double first sound, an explanation allied to that which he would offer for the bruit de galop.

"The double first sound is caused by failure of the musculi papillares to retain under the intra-ventricular blood pressure the contracted and shortened condition which they assume during the ventricular systole of the cardiac cycle. This failure on the part of the papillary muscles allows the curtains of the auriculo-ventricular valves to rebound, and thereby cause a sound of sudden and forcible tension of the valve curtains and chordæ tendiniæ. The abnormal sound forms the second portion, being due to the causes which produce the normal first cardiad sound."

The bruit de galop presents tactile sensations in very many cases. One may detect with one's hand over the heart a rise preceding the impulse and in some instances two shocks during diastole, corresponding to the double sound.

The variety of cardiac diseases manifesting the bruit de galop are pericardial, myocardial, and endocardial, but in the condition of muscular failure it is most frequently observed, whether due to toxins of diphtheria, typhoid fever or to overexcitation, due to alcoholism, arterio-sclerosis or other causes. Its prognostic value depends upon the cause of muscle failure and the experience of the observer.

W. F. Hamilton

Surgery.

Intradural Section of Nerves.

ABBE. "Intradural section of the spinal nerves for neuralgia."—*Boston Medical and Surgical Journal*, October 1st, 1896.

It is nearly eight years since Dr. Abbe operated upon the first of three cases of intradural section of the posterior spinal roots.

The patient was forty-four years of age, and an iceman. Prior to this trouble he had no disease—rheumatism, malaria or specific. During the war an exploding shell left a small piece of itself in his left shoulder, which was extracted on the field, and left but a small flesh scar ; never otherwise injured. Sometime afterwards he spent a day putting a zinc lining into a refrigerator, and on the night following he first had a throbbing pain, localized at a single spot on the posterior surface of the right forearm, above the middle. The pain kept him from sleep. It was continuous at the site, and about one week later there was added a paroxysmal pain, giving a peculiar twitching sensation in 'the thumb, index and middle finger of the same hand.

He was treated by electricity, blisters, counter-irritant and internal medication by excellent doctors, but his arm grew steadily worse. There seems to have been distinct muscular spasm with the sensation of pain.

A diagnosis of ascending neuritis was arrived at. The posterior interosseous and ulnar nerves were stretched. The pain was not improved. If anything it was worse.

At the patient's earnest request the arm was amputated above the deltoid insertion, and above any site of local pain heretofore complained of. The wound healed by first intention. When the arm healed there was found to be no abatement of the pain.

After further medical treatment, the pain still continuing, Dr, Abbe divided the sixth cervical nerve, both roots, outside the dura ; the seventh, both roots, outside, and also the posterior root inside, and the posterior root of the eighth inside of the dura. Two or three ounces of spinal fluid escaped on opening the dura. The slit in the dura was sutured with fine catgut.

The patient had more or less pain in the arm during the next ten days, but it changed in character. It no longer seemed to go down into the fingers. It ceased to go up into the shoulder as it once did. After eleven days the morphia, which he had been in the habit of taking, was altogether stopped, and he was allowed to get up.

His morphine habit was in abeyance for a year or two and he gained twenty pounds in weight. At the end of four years he complained that he still had some shooting pains in the stump and a drawing feeling in the fingers of the amputated arm. Seven years after operation he still complained of some pain, but was in good health.

The second case was a man, forty-five years of age. He dated the beginning of his trouble to exposure of his arm in a street car window after perspiring freely. The pain began a few days afterwards, between the thumb and index-finger, and grew steadily worse. The ulnar nerve was first stretched and afterwards excited, the pain becoming aggravated after each operation.

Then the posterior roots of the sixth, seventh, eighth cervical and first dorsal, were divided intradurally. Immediate relief from pain. Some return of pain in second week. The morphine habit entirely checked. Six years later there were relatively slight evidences of pain.

The third patient was a florist aged forty. He had evidently had some form of infantile paralysis, which was thought to have been infantile hemiplegia, resulting in athetoid paralysis of right arm and hand, and somewhat the same of the right leg. His right arm had been so useless for years from constant and excessive athetoid movements, with increasing neuralgia of the forearm that the forearm was finally amputated. The pain however did not abate; and the surgeon stretched his brachial plexus. The pain was not mitigated, and the incessant athetoid movements made it so unbearable that amputation at the shoulder was resorted to. The pain continued after this and seemed even worse.

Finally the posterior roots of the fifth, sixth, seventh, eighth cervical and first dorsal were divided intradurally, and a piece a quarter of an inch long cut from each. His condition was greatly improved.

Mr. Bennett of St. George's Hospital, London, divided the lower four posterior lumbar roots, and one upper dorsal for sciatic neuralgia (evidently an ascending neuritis of the lower extremity). Pain entirely disappeared, but spasms of muscles occurred at intervals. During the eight days following there was a progressive restoration of sensation of the anæsthetic area. The patient died suddenly of cerebral apoplexy on the twelfth. The post-mortem verified this as well as showed that no union of the divided nerve roots had taken place

Mr. Victor Horsley has reported two cases of spinal intra-dural resection of the posterior roots.

Mr. Sherrington has given us some very instructive animal demonstrations of the peripheral distribution of the fibres of the posterior roots of some of the spinal nerves. Most points on the skin receive their innervation from two or even three roots. Thus, for example, the nipple lies mainly in the territory of the fourth dorsal root, but the third and fifth roots contribute fibres as well, and only after destruction of all these roots, does the territory become anaesthetic. Thus the whole of a posterior nerve root may be destroyed and yet no distinct disturbance of sensation arise.

The two dangers of the operation are, shock from hæmorrhage, and sepsis. All cases of root section thus far reported have made excellent recoveries. The treatment of the dural incision should always be by immediate suture with fine catgut.

These cases of ascending neuritis are sometimes most intractable, and we seem to have in intra-dural section a remedy that may in properly selected cases, enable us to afford relief from pain which otherwise would render the patient helpless. Even in weak patients the operation has been devoid of risk. It is sound in theory.

There ought to be no risk in severing the posterior roots of the third and fourth cervical, as well as those of the brachial plexus, simply because they supply the phrenic, inasmuch as that needs motor supply only, and at the diaphragm has the opposite phrenic in reserve.

Geo. E. Armstrong.

Obstetrics and Diseases of Infants.

Uterine Hæmorrhage and Rupture of the Circular Sinus.

P. Budin. "Hémorrhagies utérines et ruptures du sinus circulaire,' —*Presse Médicale*, 6th Aug. 1896, reviewed in *L'Obstétrique* 15th Sept. 1896.

Hæmorrhage occurring during the latter months of pregnancy, has usually been ascribed, either to vicious insertion of the placenta or to a premature detachment of portion of a normally situated placenta. Occasionally, however, not a sign of either of these conditions can be found, but a clot of variable size is observed, covering a tear in the coronary sinus, and extending a short distance within its lumen. In such cases the hæmorrhage no doubt comes from the ruptured sinus. The possibility of such an accident has been mentioned by Duncan and Jacquemier, without however giving any proof of its actual occurrence. Budin has been investigating this subject since 1893, and has collected 22 cases of hæmorrhage from ruptured sinus. The causes of rupture are not always apparent. The chief pre-disposing cause seems to be insertion of the placenta in the lower uterine segment, while sudden shocks, frights, jars, excessive fatigue or excitement, jolting over rough roads have apparently acted as exciting causes. Hæmorrhage is the chief symptom; it may be slight, moderate or severe, and may occur externally, internally, or both. It is difficult or impossible at the time to diagnose between hæmorrhage from ruptured sinus, and that from placenta prævia or partial detachment of a normally situated placenta; but a careful examination of the placenta after its delivery, enables a retrospective diagnosis to be easily made. Pinard lays considerable stress upon the occurrence of premature rupture of the membranes and spontaneous premature labor in placenta prævia, but in Budin's experience these symptoms have little diagnostic value. More reliance can be placed upon the slow and imperfect engagement of the presenting part, thickening of portion of the lower uterine segment together with thickening and rugosity of the membranes. The prognosis of ruptured sinus is serious for the mother and grave for the child; in Budin's 22 cases, one mother died and three children were dead born. Prophylactic treatment consists in guarding against excessive fatigue shock, violent emotion, rough travelling, &c. Hæmorrhage may usually be checked by rupture of the membranes, but not always. If it persists, and dilation is well advanced, delivery should be completed as soon as possible by forceps or version. If dilatation is insufficient, a tampon should be applied.

Pujol reports four cases of hæmorrhage from ruptured sinus (*Archiv, de Gyn. et de Tocol.* June, 1896), in three of which there was vicious insertion of the placenta. He recommends artificial rupture of the membranes if labour has already begun, and the use of Champetier de Ribes bag. If the breech is presenting, one foot should be brought down and gentle continuous traction made until delivery is effected.

Three Successful Cesarean Sections on the Same Patient.

C. N. Von de Poll. "Drei gluckliche Kaiserschnitte bei ein und derselben Frau.,"—*Centralblatt fur Gynakologie*, 23 Mai, 1896.

The patient was a VI-para, aet 36. In her first three labours a putrid fœtus was born, the 1st by natural efforts, the 2nd, by means of instruments, and the third by decapitation. In her fourth pregnancy, she was delivered (12th February, 1886) by C. section of a living child, weighing 2850 g. In her fifth pregnancy, she was again delivered by C. Section (25th Sept., 1888) of a living child, weighing 3100 g. She continued menstruating regularly for seven years when she became pregnant once more. The last period began on the 11th May, 1895, and lasted fourteen days. On 1st Feb. 1896, she entered hospital and a living child weighing 3500 g. was delivered by C. section.

The operation lasted one hour and twelve minutes. There was slight elevation of temperature for a couple of days, otherwise the puerperium was normal, and the patient was discharged from hospital on the 19th day.

The pelvis was of the generally contracted, flat, rachitic type.

The following were the measurements:—

Between the Ant Sup. Spines	26	c.m.
" " Crests	26½	"
" " Post. Sup. Spines	8½	"
Conjugata Externa	16	"
" Diagonalis	8	"
" Vera	6.2 to 6.5 c.m.	

Post-mortem Cesarean Section—Living Child.

Erdheim. "Sectio Cæsarea in mortua. Lebendes Kind."—*Centralblatt für Gynakologie*, 4th April, 1896.

A. A., entered the Vienna Krankenhaus on 19th December, 1895, suffering from such severe dyspnœa from the pressure of an enlarged thyroid gland, that tracheotomy was performed at once. As extirpation of the gland was impossible on account of its retrosternal position, thyroid tablets were administered with partial relief of the symptoms. On 3rd January, a sudden tracheal hæmorrhage occurred, which proved fatal in a few minutes. As the woman was in the seventh lunar month, and the fœtal movements were perceptible, C. section was performed immediately (four minutes after the mother's death) and a living child weighing 1400 g. was extracted. Although somewhat asphyxiated, it was soon resuscitated by Schultze's method and took nourishment readily. It was transferred to the foundling hospital, but died in 13½ hours of asthenia. The uterus contracted immediately after the extraction of the child, and a further contraction must have taken place subsequently, since at the autopsy the uterus was found to be scarcely larger than the size of the fist.

A Fatal Case of Puerperal Tetanus.

DRAPPIER. "Un cas de Tétanos Puerpéral."—*Archives de Gynécologie et de Tocologie*, Mai, 1896.

On December 30th, 1894, Mrs. J., aet 25 II-para, was confined at full term. The labour was easy and uncomplicated, lasting only six hours; the placenta was expelled spontaneously ten minntes after the birth of the child. An antiseptic intrauterine douche was given at the conclusion of labour, and hot vaginal injections of boiled water were administered daily during the puerperium. There was no rise of temperature at any time; the lochia were never offensive and had almost entirely ceased by the 8th day. The patient kept her bed for five days and was well enough to resume her household duties on the 8th day. There was slight soreness of throat on the 8th day, but it soon disappeared. Toward the end of the 9th day she again complained of sore throat, and slight difficulty in swallowing, and had a chill which lasted ten minutes. On the 10th day there was general redness of throat, and slight pain in the muscles of the neck, as well as torticollis. As these symptoms were thought to be rheumatic, sod. salicylat. was prescribed along with vapour baths and hot applications to the neck. The following day, she was much better, was free from fever and could swallow easily. On the 14th day she complained again of difficulty in swallowing and could not open her mouth; when seen by Dr. Drappier the head was bent forward upon the chest, the thighs flexed upon the abdomen, and the legs upon the thighs. It was impossible to change this posture. Tetanus was diagnosed, a hot intrauterine douche of Van Swieten's liquid was given, choral was administered by the bowel, and morphia hypodermically. The case progressed favourably and on the 19th day she seemed much better; during the day, without any visible cause, she suddenly lost consciousness and in half an hour the abdomen became greatly distended. The pulse rose to 140 and the respiration to 35, and in two hours she died.

As there was no external wound, and as a foul discharge came away on two occasions while an intrauterine douche was being administered, it was inferred that the infection entered through the internal surface of the uterus. Upon enquiry it was found that the daily vaginal injections had been given by the husband, who was a farrier by trade, and consequently in daily contact with horses. Moreover, the room in which the patient was confined was in direct communication with a stable in which horses were constantly kept. All the conditions were favorable for the presence of the bacillus of Nicolaïer. The practical conclusion to be drawn from this case is that routine vaginal douching during the puerperium may prove dangerous by conveying infection directly into the uterine cavity. Douching should therefore be employed only when it is directly indicated, and then the strictest precautions should be taken to prevent accidental infection.

Puerperal Tetanus.

B. C. Hirst. "Three cases of puerperal tetanus." *The American Journal of Obstetrics*, July, 1896.

In the short space of three weeks, three cases of fatal puerperal tetanus occurred in the service of the University Maternity in Philadelphia. This institution is one of the best equipped and most carefully managed maternity hospitals in America. The building is new and admirably adapted for carrying out a rigid technique. The confinement wards are situated in well-ventilated, one story pavilions, isolated from the rest of the hospital. Each patient has a separate ward in which she is confined, and where she remains till convalescence is fairly established: she is then transferred to one of the large convalescent wards in the main building. Every precaution is taken to disinfect bedding, clothing, utensils, instruments, the person of the patient and the hands of the attendants. The only weak point in the technique in these cases, was that the water used for washing and douching the patients, was neither filtered nor boiled, reliance being placed upon the creolin or corrosive sublimate which were added to it. At that time the water supply was impure owing to heavy floods in the valley of the Schuylkill, and a careful bacteriological examination with inoculation experiments seems to verify the suspicion that the impure water was the infective agent. The practical lesson to be learned from this unfortunate outbreak is, that the water used for washing and douching patients during labour and the puerperium should be boiled, if absolute safety is to be ensured. It is important also to note that chemical disinfectants can not be relied upon to destroy any germs which may be present in the water during the time the douche is being administered. An apparatus for the filtration and sterilization of the tap-water has been fitted up and it is to be hoped that no more cases will occur. In Philadelphia there are from 35 to 40 cases of tetanus every year.

Laparotomy in a New-born Child for Hernia of the Cord.

MARJANTSCHIK. " Ein Fall von Laparotomie an einer Neugeborenen wegen Hernia funiculi umbilicalis."—*Centralblatt für Gynakologie*, 28 März, 1896.

Laparotomy is rarely performed in new-born children, only 31 cases being reported since the year 1836. The mother, æt. 24, III-para, was delivered with manual assistance, the child presenting by the feet. It was asphyxiated, but was resuscitated by Schultze's method in fifteen minutes. It was well developed and weighed 3100g. From the middle of the abdominal wall projected a swelling of the size of an apple. The upper border reached to the ensiform cartilage, and the lower to the umbilical cord. The base was surrounded by a thick band of skin resembling cicatricial tissue. The tumour itself consisted of a sac with thin transparent, bluish walls, lying over the liver, 8 cm. long and 6 cm. broad. The tissues of the umbilical cord (Amnion and Wharton's Jelly) and the peritoneum formed part of the sac-wall. The protruding intestine could be reduced and the margins of the opening approximated. Crying did not seem to alter the size of the tumour very much. On the second day the sac began to lôse its transparency and assume a yellowish green colour. Operation having been decided upon, chloroform was administered and an incision made in the middle line the whole length of the sac (10 cm.). The amnion was dissected off ; the umbilical vessels were freed of Wharton's jelly ligated and divided, and the exposed peritoneum removed. The prolapsed intestine was replaced and retained by means of compresses ; the edges of the opening were freshened and sutured. The stitches were passed through the whole thickness of the abdominal wall, including the peritoneum. Sixteen sutures in all were introduced, four being superficial. The operation lasted 55 minutes, and one drachm of chloroform was used. The upper and lower extremities were found to be deeply cyanosed after the operation ; the child was accordingly wrapped in wadding and surrounded with bottles of warm water. It slept most of the day and night, crying only before a movement of the bowels. During the first day it took sugar water and then mother's milk with water. Brandy was given subsequently, and the bowels moved by injections. The temperature was irregularly high. Slight jaundice appeared and death occurred during the sixth day. The wound healed well, the margins being firmly adherent.

In commenting upon this case, the operator drew the following conclusions regarding the indications for treatment :

1. If the defect in the abdominal wall is so great that there is danger of the sutures tearing out, or if it is impossible to draw them together, one must

(*a*) Operate according to Benedict's modification of Olshausen's method, if the child is viable.

(*b*) Use the expectant method with antiseptic compresses and bands if the child is not viable.

2. If the opening is very small

(*a*) Use an ordinary ligature if the contents can be replaced.

(*b*) Do a radical operation (laparotomy) if the contents cannot be replaced.

3. If the opening is of moderate size, do a laparotomy.

J. C. Cameron.

Pathology.

The Relationship Between Inflammation and Sundry Other Forms of Fibrosis.

ADAMI. "On the relationship between inflammation and sundry forms of fibrosis."—The Middleton-Goldsmith Lecture for 1896, *Medical Record*, March 14th and 21st, and April 4th and 11th.

COATES and AULD. "On endarteritis deformans, or atheroma, and aneurysm, and their relations to each other."—*Journal of Pathology and Bacteriology*, July, 1896.

It is a curious fact that in practically all the recent text-books on general pathology there is no satisfactory treatment of the subject of fibrosis in general, or at all events no definite chapter devoting any appreciable attention to this in a systematic manner. And yet so common is its occurrence as a sequel to all kinds of influences, that it is rarely absent in one part of the body or another in persons who have attained their sixth decade. It is by no means uncommon to find the subject in general gracefully evaded and the discussion on the nature of the process avoided by the generous use of a confusing vocabulary, which naturally brings us in no way nearer to our goal in trying to understand in what category the changes are to be placed. This terminology includes such terms as sclerosis, especially arterio-sclerosis, cirrhosis, and even fibrosis, words which in themselves convey but little idea of the true nature of the process, though they do indeed explain the morbid condition present.

While it may, for example, be a matter of convenience to denominate the various thickenings found in the valves of the heart as sclerosis, or while again the vascular changes incident to old age and following upon some of the chronic intoxications may be conveniently referred to alternately by such terms as arterio-sclerosis and atheroma, yet the matter is quite different when the suffix "itis" is employed for the same conditions. While the former terms are each in themselves non-committal, the persistent use of the words "endocarditis chronica" and "endarteritis chronica" imply at once that the condition is of an inflammatory nature, and although more recent work is yearly rendering the contrary more obvious, the same nomenclature is maintained. It is with this conviction that Prof. Adami considers the subject in his remarks before the Pathological Society of New York, and expresses his strong belief that the time has come to call a halt and to consider well in how far we are justified in classing many of these processes with the inflammations.

To begin with, a clear idea of inflammation is essential, and for a satisfactory definition we can refer back to the author's exhaustive article on the subject in Prof. Allbutt's New System of Medicine. Here, by means of a comparative study of the process, and following in part the lines of Metchnikoff, we are shown that there is in the process of inflammation something more than is conveyed in the older ideas. Even the classical definition of Burdon Saunderson must, to some extent at all events, yield to the newer researches of the past decade. Micro-organisms and their actions have been carefully studied, the effects of their chemical products noted, and all with the result that we obtain a clearer view of the process involved in the term inflammation. It is indeed something more than the mere "succession of changes which takes place in a living tissue as a result of some kind of injury, provided that this injury be not sufficient to destroy its vitality."

As the author has readily shown, the atrophic changes which occur in the detached retina as the result of trauma, are not of an inflammatory nature, and so too with many similar events. While, however, the definition as given indicates that inflammation is essentially a process, not a mere condition, it would seem that one may go still further and say that throughout the whole series of changes which an inflamed area undergoes, a definite purpose exists—that in the determination of blood to the part, the advent of the exudate and the leucocytes, and all the changes that are incident to the process, there is the definite effort at a restoration of the former condition. An inflammation, then, would be "the series of changes which constitute the local attempt at repair of actual or referred injury to a part."

There are those who would have us believe, in spite of the numerous proofs to the contrary, that an inflammation is essentially microbic. To such, one needs but refer the many undeniable scientific experiments which manifest how readily purely mechanical, chemical and other influences may equally well induce inflammatory changes, the same evidences of attempted repair.

To say, as does Prof. Coates, that inflammation is to be defined as the process brought about in tissues by the action of any irritating agent, seems equally unsatisfactory as the other referred to above. In discussing the subject of chronic inflammation the writer insists, too, that the process is far from being always reparative—that sometimes, indeed, it may be destructive—in verification of which is mentioned cirrhosis of the liver and destruction of liver parenchyma The example, it would seem, is nevertheless ill chosen. There would seem to be now more than ever a tendency to regard the cirrhotic process as an entirely secondary one, the primary lesion being a destruction of liver parenchyma. Such being the case, we have here an excellent example of attempt at repair, an attempt, it is true, which does not carry success with it, inasmuch as the reproduction of the original tissue falls short and the new formation of the lower grade cell predominate, viz., the fibrous tissue. Yet the truth remains that when the irritant has destroyed the liver cells there is induced an effort to repair the injury, and inasmuch as there is insufficient capacity on the part of the remaining cells to reproduce their kind completely, another tissue is formed to fill the gap, and for this process Dr. Adami employs the suggestive name "Replacement Fibrosis," of inflammatory origin.

In addition to this indirect mode of fibrous hyperplasia is another, more direct, where the irritant induces by slow and long-continued, as well as probably intermittent, action a primary increase of the fibrous connective tissue. Such forms, for example, are frequently seen in the development of thickened capsules of organs covered by peritoneum, in the capsules formed about old tuberculous foci, where the latter act as mechanical or chemical irritants, and, too, in many infective processes where the agent induces, as the first effect of its entry, a hyperplasia of connective tissue elements.

But these are not the only forms of fibrosis which occur, for under certain conditions, where it is difficult to see any inflammation, one often finds a true hyperplasia of connective tissue. When in the body certain tissues of the higher order are obliged to function more than usual, the effect may be seen in the development of more cells than normal, in other words hypertrophy, or more truly numerical hypertrophy, *i.e.*, hyperplasia occurs. Such for example is the common means of developing increased muscular tissue and the interesting question is discussed as to the possibility of so low a form of tissue as the fibrous being similarly capable. Can we, in other words regard the fibrous connective tissue as capable of possessing a definite function, in the narrower sense of that word, that is as carrying on a definite work ? An affirmative answer would seem the most reasonable, basing our views, for example on the function of the valves of the heart, the lining membrane of vessels, etc. Under certain conditions it is shown that where evidence of inflammation is quite absent these structures may become distinctly increased and hyperplastic. The two conditions which favour this process are mainly these. In the first place it is shown that where increased tension is induced within the heart artificially, there one obtains, under certain conditions, increased fluid driven between the tissue spaces into the valves, that as a result, small elevations are found, the sequence evidently of the strain. Roy and the author have repeatedly proved the possibility of such an experiment by ligaturing the aorta of dogs and rabbits.

What is thus produced experimentally, occurs too in all probability in certain diseased conditions. Thus for example in chronic renal disease, and in any other conditions where the tension is raised in the circulation there is an almost constant sclerosis of the valves, the result, the author believes, of a double process, viz., the increased strain on the valves, combined with an unusual amount of nutrient fluid being driven into the tissues, as a consequence of the abnormal circulatory tension.

Increased labour then for the fibrous tissue may result in overgrowth. The main function of connective tissue being to support and to bind together other forms of cells, it seems but natural that where abnormal support is necessary, nature will supply the required material by inducing hyperplasia, granting of course always that the condition of the system otherwise is in a satisfactory and healthy state.

And the history repeats itself in the same manner with reference to the arterial system, to the sclerosis which results there in a thickened intima with other changes. Just as the valves of the heart are to a large extent nourished by the blood circulating in its chambers, so too is the intima of the arterial system analogously provided with its necessary nutrition from the blood running in its lumen. As with the normal condition, so too with diseased states of the two analogous tissues, increased work implies hyperplasia of tissues, thickening of the intima, one form at least of the so-called endarteritis, a form which from this reasoning is not of the nature of an inflammation, but the result merely of prolonged high tension in the vessels and an over nutrition of their inner coats.

It is with considerably different views that Prof. Coates approaches the subject of arterio-sclerosis and atheroma and bases his views on an examination mainly of the cerebral arteries. The theories of Thoma are according to this author not tenable for any but the largest arteries while the whole condition is regarded essentially as a disease primarily of the intima. This inner lining of the arteries becomes affected by what he calls an "inflammatory hypertrophy," a term rather hybrid in nature perhaps, though explaining plainly his idea.

The tiny nodules found on the cerebral arteries resemble he believes similar inflammatory thickenings as seen in the cornea. These exert by constant pressure and impaction, an injurious influence on the media thus weakening that coat secondarily and predisposing to the formation of aneurysms.

While from the drawings that accompany the text there may be much in favour of this view, yet it cannot be but equally certain that the work of Thoma, Councilman and others proving the contrary must deserve more than an equal attention. That the media is primarily involved in the process of nodular sclerosis is too generally accepted to be easily disproved in spite of the examples cited, and altogether it must be agreed that the subject is still a bone of contention among many of the leading pathologists on both sides of the ocean.

C. F. Martin.

Canadian Medical Literature.

[The editors will be glad to receive any reprints, monographs, etc., by Canadian writers, on medical or allied subjects (including Canadian work published in other countries) for notice in this department of the JOURNAL. Such reprints should preferably be addressed to Dr. Kenneth Cameron 903 Dorchester street, Montreal.]

PERIODICALS.

JULY, 1896.

THE CANADIAN PRACTITIONER.

The diagnosis of typhoid fever—G. R. Cruickshank, Windsor, Ont., p. 171.

Unusual features in the clinical history of adenoid disease—Price-Brown, Toronto, p. 377.

Missed abortion—F. R. Eccles, London, Ont., p. 462.

Treatment of syphilitic affections of the eye by mercury, potassium iodide, and pilocarpine combined—G. H. Burnham, Toronto, p. 397. (*From the Archives of Ophthalmology.*)

THE CANADA LANCET.

Clinical notes on methods and new remedies in the treatment of diseases of the upper air passages—D. F. Chappell, New York, p. 380.

Extra-uterine pregnancy; four and half months; operation; recovery—D. J. Gibson, Belleville, Ont., p. 388.

CANADA MEDICAL RECORD.

Why scarlatina is endemic in Montreal—Robert Wilson, Montreal, p. 469.

Causes predisposing to infection—A. J. Richer, Montreal, p. 476.

THE CANADIAN MEDICAL REVIEW.

Diphtheria and its treatment—C. R. Charteris, Chatham, Ont., p. 1.

THE DOMINION MEDICAL MONTHLY AND ONTARIO MEDICAL JOURNAL.

Dislocation of the acromial end of the clavicle, with report of four cases—Thos. H. Manley, New York, p. 33.

A plea for conservative oral surgery, with practical illustrations—G. Lenox Curtis, New York, p. 38.

An interesting case—A. M. Sutton, Nicola Lake, B.C., p. 42.

Whither are we drifting?—J. H. Hamilton, Hillsburgh, Ont., p. 44.

THE MARITIME MEDICAL NEWS.

Annual Address to the Nova Scotia Medical Society—R. A. McKeen, Little Glace Bay, N.S., p. 207.

The future of cancer of the uterus—A. Lapthorn Smith, Montreal, p. 213.

L'UNION MÉDICALE DU CANADA.

Notes sur un fibro-sarcôme du nerf sciatique—MM. Leguen (de Paris) et Marien (de Montréal), p. 385.

Traitement de l'éclampsie puerpérale—E. A. Réné de Cotret, Montréal p. 387.

LA CLINIQUE.

Fait clinique—Dr. Jéhin Prume, Montreal, p. 669.

AUGUST, 1896.

THE CANADIAN PRACTITIONER.

A tumour of the medulla oblongata—J. E. Graham, Toronto, p. 549.

Treatment of puerperal sepsis—H. T. Machell, Toronto, p. 559.

Adenomyoma of the round ligament—Thos. S. Cullen, Baltimore, p. 572.

Aneurism of the aorta communicating with the left auricle—A. McPhedran, Toronto, p. 578.

THE CANADA LANCET.

The cause of mental impairment in children—J. Madison Taylor, Philadelphia, p. 443.

Observations on antiseptic therapy—O. McCullough, Erin, Ont., p. 449.

CANADIAN MEDICAL RECORD.

Scarlatinal Dropsy, F. W. Campbell, Montreal, p. 521.

The vaginal route for operations on the uterus and appendages, A. Lapthorn Smith, Montreal, p. 526.

THE DOMINION MEDICAL MONTHLY AND ONTARIO MEDICAL JOURNAL.

A plea for conservative oral surgery, with practical illustrations—G. Lenox Curtis, New York, p. 145.

Symphyseotomy and craniotomy—Charles Maygrier, Paris, p. 149.

Secondary section for intestinal obstruction—Dr. Davis, Victoria, B.C., p. 153.

THE CANADIAN MEDICAL REVIEW.

Lachrymal disease—J. H. McCassy, Dayton, Ohio, p, 31.

Administration of anæsthetics—H. H. Oldright, Toronto, p. 34.

MARITIME MEDICAL NEWS.

President's Address, Maritime Medical Association—P. Conroy, Charlottetown, P.E.I. p. 241.

President's Address, New Brunswick Medical Society—G. E. Coulthardt, Fredericton, N.B., p. 251.

L'UNION MÉDICALE DU CANADA.

Eclampsie puerpérale—Albert Laurendeau, St. Gabriel de Brandon, p. 443.

Traitemént de l'éclampsie puerpérale (suite)—E. A. René de Cotret, Montreal, p. 453.

LA CLINIQUE.

Des varices de la vulve et des hémorrhagies consécutives à leur rupture—J. Ouimet, Valleyfield, Q., p. 1.

MEDICAL NEWS, (AUG. 8TH).

A case of suppurative cholecystitis, with rupture of the gall-bladder and general peritonitis, complicating typhoid fever—Henry B. Anderson, Toronto, p. 155.

SEPTEMBER, 1896.

THE CANADIAN PRACTITIONER.

Address of the President of the Canadian Medical Association, James Thorburn, Toronto, p. 629.

Abdominal and pelvic operations for the relief of conditions incident to the puerperal state, J. F. W. Ross, Toronto, 636.

Hæmorrhagic pancreatitis, A. McPhedran, Toronto, p. 650.

THE CANADA LANCET.

The cause of mental impairment in children (continued) J. Madison Taylor, Philadelphia.

Observations on antiseptic therapy, (continued) O. McCullough, Erin, Ont.

CANADA MEDICAL RECORD.

Streptococcic puerperal infection—injection of Marmorek's antistreptococcic serum—recovery, H. L. Reddy, Montreal, p. 569.

Tetany following scarlatina, J. B. McConnell, Montreal, p. 573.

One hundred and ten operations for retro-displacement of the uterus with subsequent results, A. Lapthorn Smith, Montreal, p. 576.

THE CANADIAN MEDICAL REVIEW.

Occipito posterior positions, Albert A. Macdonald, Toronto, p. 61.

Mammary Carcinoma, A. B. Welford, Woodstock, Ont., p. 66.

THE DOMINION MEDICAL MONTHLY AND ONTARIO MEDICAL JOURNAL

Proceedings at the meeting of the Medical Council of Ontario, p. 257.

L'UNION MÉDICALE DU CANADA.

Extinction de voix guerie a la suite d'une hysteropexie, A. Charbonneau, Ogdensburg, N Y., p. 513.

Traitement de l'eclampsie puerperale, (suite) A. René de Cotret, Montreal, p. 514.

Traitement des affections syphilitiques du globe oculaire par les injections intra-veineuses de cyanure d'hydrargyre, Jéhin Prume, p. 526.

Treatment of Syphilitic Affections of the Eye by Mercury, Potassium Iodide and Pilocarpine Combined—G. H. Burnham.

Though pilocarpine has been used to a limited extent in syphilis the combination of it with mercury and iodide of potash is little known.

The case reported was a man who had suffered from syphilitic inflammation of both eyes for nine months and had been receiving anti-syphilitic treatment with the local use of atropine. When he came under the observation of the writer his condition was as follows:

Left Eye.—Much conjunctival, sub-conjunctival, and ciliary injection, pain at times, aqueous turbid, many lymph dots on the posterior surface of the cornea, very many posterior synechiæ, some being broad and dense, with a thin deposit of lymph in the pupillary area. V= perception of light only.

Right Eye.—No letters of Snellen type at twenty feet, and only letters of No. XL. of the same type at eight inches; cornea and aqueous very slightly affected, posterior synechiæ more numerous and broader, so as to form almost one solid ring of adhesion, and the lymph deposit in the pupillary area denser.

Mercury and iodide of potash were administered internally with atropine externally for four weeks, with the result of the eyes getting slowly worse. Then, in addition to the internal use of mercury and iodide of potash, pilocarpine was given hypodermically, beginning with gr. $\frac{1}{8}$ and gradually increased to gr. $\frac{1}{4}$. This was continued for three weeks, then after three weeks for two weeks more, and again in five weeks for two weeks longer. While in use the pilocarpine was given every day, unless the administration gave rise to nausea, headaches, or oppression over the region of the heart, when it was stopped for one or two days, or perhaps the dose reduced only. After one week an improvement could be seen, at the end of three weeks it was quite evident, and at the termination of fifteen weeks the vision was $\frac{20}{30}$ Snellen. The posterior synechiæ had been steadily thinning, so that the broad dense bands began to look quite attenuated and web-like. After an interval of eight weeks the pilocarpine was again given ten times with marked benefit. The deposit of lymph seemed to be practically gone in the left eye and much lessened in the right. The vision was $R=\frac{20}{40}$, $L=\frac{20}{20}$. The mercury and potash had been used continuously.

The manner in which this combined form of treatment acted upon the long-standing iritic adhesions, when compared with the inertness of the powerful remedies, mercury and iodide of potash, alone, point to its use as of exceptional value in syphilitic lesions of long duration.

A Case of Fibro-sarcoma of the Sciatic Nerve---Legueu and Marien.

This case was reported and the specimen shown before La Société Anatomique de Paris. The patient, a strong, healthy man, aged 35 came under observation for a tumour in the right buttock, and which had been growing rapidly for three months. His first symptom had been a pain in the buttock, especially when sitting down; he also observed that the leg was easily tired and he felt numbness and tingling throughout the whole limb. He soon noticed the swelling, which had increased with great rapidity. On examination a firm tumour, regular in outline, and about the size of a fœtal head, was found in the buttock, evidently under the gluteal muscles, it was freely movable in the transverse, but quite immovable in the vertical direction; there was pain on pressure shooting down the sciatic nerve. A sarcoma of the sciatic nerve, or one pressing upon the nerve, was diagnosed. One incision, 12 to 15 centimetres long, was made over the course of the nerve, and another, 8 to 9 centimetres, at right angles following the gluteal fold. The tumour was encapsulated and intimately associated with the sciatic nerve. On incising the capsule an attempt was made to separate the nerve fibres, but without success, and the nerve was cut above the tumour. It was then found that several nerve filaments spread over the capsule could be dissected out, and these were carefully united to the cut end of the nerve. The muscles and skin were sutured and an iodoform dressing applied. Next day there was paralysis and anæsthesia of the parts supplied by the sciatic nerve. The man made a good recovery. Four months later he could walk with a cane and follow his occupation. Microscopical examination proved the tumour to be a fibro-sarcoma. The result in this case was very satisfactory, for the writers, at the time of the operation, did not expect that the man would so regain the use of his leg as to enable him to follow his employment, and they did not hope for a regeneration of the nerve before the return of a tumour so malignant.

A Tumour of the Medulla Oblongata---J. E. Graham.

Tumours of the medulla are of the greatest rarity. In the statistics of Guy's Hospital, as given by Fagge, among the brain tumours no mention is made of the medulla. Sokoloff collected seven cases of glioma, and cases have been reported by Osler, Glyn, de Jonger, Brissaud and Charcot, but the case reported by Dr. Graham is in many respects unique, as the tumour was extra-medullary and did not implicate the cerebellum.

The patient, aged 52, had been an active, healthy man, temperate in habits and possessed of a remarkably retentive memory. There was a history of severe attacks of typhoid fever, acute rheumatism and la grippe, but none of syphilis. During the attack of la grippe one day he suddenly fainted and struck the back part of his head against a window-sill. Some months later it was noticed that he was easily tired, became irritable and less able to endure cold than formerly. There was a slight but gradual loss of co-ordination, with a tendency to go to the left side; giddiness was also complained of. A numbness of the left side of the face suddenly appeared, followed by an extension downwards until the whole of the left side was affected, and this was accompanied by a peculiar feeling as if the parts were enlarged. This feeling was at first relieved by going into a cold room or by exposure. There was a slight loss of tactile sensation on the affected side, but the sensation of pain and of temperature were normal. The skin reflexes were normal, but both knee-jerks were slightly increased. No optic neuritis, but the hearing of the left ear not so good as that of the right. Vomiting was often very troublesome. Headache, both occipital and frontal, was present, but the pain in the back of the head was especially severe and extended to the left side of the neck and to the left arm near the elbow.

About ten days before death he took to his bed on account of the dizziness.. The vomiting and pain continued and paralysis of the voluntary muscles of the left side increased, but never became complete. For two days before the end he could not swallow food without part of it entering the trachea. He lost his voice and the ability to cough up the free secretion which was caused by the irritation from food entering the trachea. There was severe pain in the left side of the chest and a few râles, followed by rise of temperature and rapid consolidation of both lungs at the back. His mind remained perfectly clear.

An examination of the head was made and nothing found in the cerebrum, but situated in the pia mater, pressing upon the restiform body, was a tumour 15 mm. long and 5 mm. in its widest part. It was separated from the fourth ventricle by the posterior pyramid, and from the olivary body by a distinct column of fibres. Its upper extremity was on a line with the junction of the lower and middle thirds of the olivary body, and its lower extremity extended nearly one-fourth of an inch below, at a line drawn through the apex of the calamus. The tumour was circumscribed and could be easily detached from the subjacent structures. When raised, a cup-shaped cavity remained, formed by pressure and wasting of the fibres of the restiform body, which was about 4 mm. in depth, and in the longitudinal and transverse diameters the same as the tumour. On microscopical examination the tumour was found to be a round-celled sarcoma, part of which was freely supplied with blood-vessels. The short course of the disease was probably due to the fact that the tumour was of a rapidly growing character, and thus seriously interfered with the circulation in such an important nerve centre.

A Case of Suppurative Cholecystitis, with Rupture of the Gall-Bladder and General Peritonitis, Complicating Typhoid Fever---Henry B. Anderson.

In the August number of this JOURNAL there appeared two interesting articles on septic infection in typhoid fever (p. 104, p. 111). Yet another report, appeared during the month, of a case illustrating the power possessed by the typhoid bacillus to set up suppurative processes in parts distant from that which is usually regarded as the chief seat of the disease.

A man aged 67 entered the Toronto General Hospital with a history of being ill for two months with chills, fever, vomiting, diarrhœa and general abdominal pains. A diagnosis of malaria had been made on several occasions, though the blood was not examined. A blood examination was at once made, both before and after a chill, but no malarial parasites were found; there was a marked leucocytosis, the increase being in the polynuclears. The man was well developed physically and mentally. Temperature ranged from normal to 102°; pulse soft and of low tension; tongue red, slightly tremulous, with a tendency to dryness; general aspect indicative of great suffering. Abdomen on the right side was full, prominent and tense, on the left side comparatively soft and relaxed. Palpation and percussion produced the most intense pain over the hepatic area in front and behind. On account of the suffering produced, it was impossible to define the area of hepatic dulness. No splenic enlargement discovered. Probable abscess of the liver, secondary to some intestinal lesion, was diagnosed. There had been no history of gall-stones or jaundice. The intense pain and fulness on the right side continued and a localized swelling made its appearance beneath the ribs opposite the ninth costal cartilage and extended below it. On the fifth day the pain ceased and swelling disappeared and the patient felt great relief, only to be followed by general abdominal pain and tenderness. The pulse and temperature rose, he grew gradually worse, became comatose, and died on the eleventh day after entering the hospital..

The autopsy revealed a general peritonitis, with a considerable amount of brownish-yellow fluid in the cavity. The small intestines were bound together with recent inflammatory adhesions. The solitary glands were swollen and there was ulceration of a few Peyer's patches at the lower end of the ileum, the floors of the ulcers were clean and smooth. The cystic duct was obstructed by a number of small, faceted gall-stones. The mucosa of the gall-bladder presented a number of small ulcerated patches, one of which had ruptured. The spleen weighed 170 grams. Cultures in blood serum and in bouillon were made from the peritoneal fluid and from the interior of the gall-bladder, and pure cultures of the typhoid bacillus were obtained.

Kenneth Cameron.

Reviews and Notices of Books.

Archives of Clinical Skiagraphy. By SYDNEY ROWLAND, B.A., Camb., Late Scholar of Downing College, Cambridge, and Shuter Scholar of St. Bartholomew's Hospital, London; Special Commissioner to "British Medical Journal" for the Investigation of the Applications of the New Photography to Medicine and Surgery. A series of collotype illustrations, with descriptive text, illustrating the applications of the New Photography to Medicine and Surgery.

The object of this publication is to put on record in permament form some of the most striking applications of the new photography to the needs of Medicine and Surgery, and certainly the illustrations are striking, as for instance that of a child, aged three months, where not only the bones are shown, but definite shadows are thrown by the heart, liver, and intestines. Each plate is described fully, the length of exposure noted, and the special applications of the method pointed out.

A Manual of Obstetrics. By W. A. NEWMAN DORLAND, A.M., M.D., Assistant Demonstrator of Obstetrics in the University of Pennsylvania, Instructor in Gynæcology in the Philadelphia Polyclinic, etc. Philadelphia, W. B. Saunders, 1896.

This is one of Saunders' *New Aid Series of Manuals*, prepared especially for the use of students. It is well got-up and is profusely illustrated, many of the best cuts being taken from the American Text-book of Obstetrics. The arrangement of the subject matter is novel, the book being divided into two parts, the first devoted to physiologic and the second to pathologic obstetrics. The metric system is used for measurements, the English equivalents being given in brackets. Noticeable among the more recent methods of treatment which are described, is Dr. Harris's method of rapid dilatation of the os uteri, illustrated by reproductions of the original photographs. A good feature in the book is the free use of tables of differential diagnosis, most of which are excellent. One of the best sections is that on the pathology of the puerperium, including hæmorrhage and sepsis.
J. C. C.

McGill Obstetric Note-Book. By J. CHALMERS CAMERON, M.D., Professor of Obstetrics and Diseases of Infancy, McGill University, Montreal, E. M. Renouf. 1896.

Much valuable obstetric material goes to waste for want of knowledge of how to record cases, the record of many cases proving of no value from lack of certain details in the report as published.

Prof. Cameron believing that a few cases carefully observed and accurately reported are more profitable than a larger number carelessly observed, has compiled this note book, which should prove of value, not only to the student, but to the physician as well, affording an opportunity of recording in a brief though accurate and systematic manner cases of obstetrics.

The Note Book consists of blanks for ten case reports, with temperature charts for mother and infant.

Strassmann's outline diagrams for recording the results of external palpation, as used in Berlin, form a valuable addition to the book.

A number of serviceable diagrams and tables unite to enhance its value to the student.

The publisher's work has been thoroughly well performed.

D. J. E.

System of Surgery. Edited by FREDERIC S. DENNIS, M.D., assisted by JOHN S. BILLINGS, M.D. Vol. IV. Tumours--Hernia—Surgery of the Alimentary Canal—Appendicitis—Surgery of the Liver and Biliary passages—Of the Uterus—Of the Ovaries and Tubes—Gynæcological Surgery—Symphysiotomy—Surgery of the Thyroid—Surgical Peculiarities of the Negro—Surgery of the Female Breast—Use of the Roentgen's Rays in Surgery. Lea Brothers & Co., New York and Philadelphia.

This is the last, and in many respects, the best volume of the work which Dr. Dennis has so ably edited. Abdominal surgery in its various departments takes up the major part of the book, and is a department which is always of interest to the surgeon. Besides the chapters on abdominal surgery, other articles are devoted to tumours, the surgery of the thyroid gland, diseases of the female breast, the surgical peculiarities of the negro, and finally, that latest addition to the surgeon's methods of diagnosis, the Roentgen rays.

In writing on tumours, the editor has adopted a new classification which is based mainly on their origin and structural characters. He says that a classification based upon clinical features cannot be utilized with advantage. All tumours are divided into three classes, neoplasmata, cystomata and teratomata. Each class contains several orders and these are again subdivided into genera and species. Only the first class is given in full, the other two, the writer states, being too incomplete for publication. It is a long and cumbersome division, too much so for practical use, and in its incomplete state cannot be very useful to the student or practitioner. The article on Hernia, by William T. Bull, is a most valuable article, covering the subject fully. Bassini's operation is recommended as giving the best results. Perfect primary union is laid down as the most important principle in the success of all operations, cicatricial tissue having a tendency to give way before the pressure from within. Frank Hartley writes on appendicitis and Charles McBurney on the surgical treatment of this disease. The latter pronounces strongly against the use of cathartics, an enema being used if the lower bowel requires evacuating. If it is decided to operate, he advises careful palpation after the patient has been anæsthetized in order to acquire as much information as possible before opening the abdomen, but he neglects to warn the operator of the danger of bursting an abscess and setting up a general infection of the peritoneum by being too thorough in the examination. The steps of the operation are clearly outlined, and the treatment given of such complications as are likely to be met with.

In writing on the surgical diseases of the ovaries and tubes, J. T. Johnson says that " extra-uterine or normal pregnancy would not exist before puberty or after the menopause," which statement, in view of the reported cases, is misleading. He strongly advises against exploratory puncture as a means of diagnosis on account of the danger of the procedure, incision being both safer and more satisfactory, but the exploration must not be carried too far. He repeats the aphorism " One's mortality in abdominal surgery is governed more by what he puts into the peritoneal cavity than by what he takes out of it." In suturing the wound the principal point is to bring like tissues to like, and it is immaterial whether this is done by one or three rows of sutures. He advises the wearing of a belt for a year after operation.

There are several printer's errors which ought to have been corrected but on the whole the work has been done excellently and we have been given a most useful book. R. C. K.

Practical Points in Nursing for Nurses in Private Practice.

By Emily A. M. Stoney, Graduate of the Training School for Nurses, Lawrence, Mass. : Superintendent of Training School for Nurses, Carney Hospital, South Boston, Mass. Pp. 456. Philadelphia : W. B. Saunders.

This book is especially intended for the use of nurses in private as distinguished from hospital practice. The first chapter on " The Nurse" contains many useful hints about conduct in the sick room. The next chapter is on the sick-room, and tells how to choose and arrange one, while the third chapter deals with the patient, special sections being devoted to the nursing of obstetric and gynæcological cases.

Emergencies, both medical and surgical, come in for their share of notice, as also the care of children.

In the appendix are given rules and recipes for feeding the sick, a table of weights and measures, a table for computing the date of confinement, and a dose-list, the book being brought to a close by a glossary.

The book will be useful to both teachers and nurses, for it contains many useful hints how to make the best of what can be found in the house. Many a good nurse is quite lost when she gets into private work for want of the appliances to which she has been accustomed in the hospital. R. C. K.

The American Academy of Railway Surgeons. Report of second annual meeting, held at Chicago, Sept. 25th to 27th, 1895. Edited by R. Harvey Reed, M.D., Columbus Ohio.

This contains some interesting papers, especially to railway surgeons. John E. Owens writes on "What should exclude applicants from railway service" a short concise paper in which the main points are taken up, colour blindness being especially dwelt upon. W. H. Buechner describes a new amputation at the knee-joint, which has been designed by Sabanejeff, of Odessa, and which is arranged so that the point of pressure is on the thickened skin over the tuberosity of the tibia. In the discussion following this paper many objections were raised to this operation, which indeed was received with very little favour. "The transportation of injured employees" is the title of a paper by Frank H. Caldwell and contains a description of the Plant hospital car, which is arranged for the treatment and transportation of patients suffering from serious injuries.

Such are a few of the papers contained in this book of transactions of a meeting which must have been most profitable and enjoyable to those taking part in it.

R. C. K.

Minor Surgery and Bandaging. Including the treatment of fractures and dislocations, the ligation of arteries, amputations, excisions and resections, operations upon nerves and tendons, tracheotomy, intubation of the larynx, &c.. By Henry R. Wharton, M.D., Demonstrator of surgery in the University of Pennsylvania, Surgeon to the Presbyterian Hospital, &c. Third edition, pp. 597. Lea Brothers & Co., Philadelphia and New York.

This book is so well and so favourably known that any criticism seems unnecessary. In the present edition the work has been so much extended that it is almost a misnamer to call it "Minor Surgery." The principal operations are all given, as amputations, excisions, ligature of arteries, &c., but we fear that the descriptions of these operations are too short to be of much use to the student and therefore it would have been better to have kept the book within its previous limits. However, this in no way detracts from the value of the work as a treatise on minor surgery, a part which it most thoroughly performs.

R. C. K.

The Pharmacopœia of the Montreal Dispensary. 1896.

Although the dispensary was founded in 1843, this is the first time that the prescriptions in common use there have been published. The "Pharmacopœia" is divided into departments corresponding to the various clinics, and the prescriptions are grouped under these headings so that reference is easy. It is a handy little book and contains many excellent combinations.

Pharmaceutical Items, and New Appliances.

It is intended under this column to take notice of and criticize new instruments or surgical appliances, pharmaceutical novelties, and such proprietary remedial preparations as conform to the irrefragable law of our profession, and make no secret of their composition.

Apenta Water.—For some months past we have made trials of an Hungarian aperient mineral water recently introduced by the Appollinaris Company under the name of Apenta. It comes to us from Uj Hunyadi Springs near Buda Pest in Hungary. Careful chemical analysis shows that it contains a very large percentage of both the magnesium and sodium sulphates, and is distinctly alkaline, after the dissolved carbonic acid has been driven off by heat. *The Lancet* (Mar. 28th, 1896) says of it: "Its composition in regard to its saline and active constituents, as far as we have examined samples obtained at different times and different places is constant, a point of some importance, since the practitioner is thus enabled to prescribe definite quantities for definite results." The mean composition in grammes per litre according to the analysis of the *Lancet* was found to be as follows: magnesium sulphate 23·40; sodium sulphate 16·32; sodium chloride 1·81; calcium carbonate 0·90; and calcium sulphate a trace. The spring has been placed under the control of the Royal Hungarian Chemical Institute, which ensures by State guarantee the constancy of its composition. Its taste is bitter, but not so disagreeable as it would be if the sodium sulphate were in excess. Natural mineral waters as a class are undoubtedly more effectual than artificially made waters which approximate to them in composition, and we have no doubt that Apenta will approve itself as one of our best natural aperient waters. It has already been considerably employed in this city and has given satisfaction.

Listerine.—This well known disinfectant is strongly recommended by many physicians, not only for external use, but also as an effectual, and not unpleasant internal antiseptic. In the States many physicians have employed it with success in the summer diarrhœa of infancy.

The *Irvin half minute Clinical Thermometer.*—We have seen this instrument and tested it. It has proved itself very sensitive and reliable.

Radnor Water.—This Canadian water is establishing for itself a reputation both through the States and in England as an excellent table water, free from all organic impurities. We are in receipt of a letter from a physician who has used it as a diuretic in nephritis, with satisfactory results.

Society Proceedings.

MONTREAL MEDICO-CHIRURGICAL SOCIETY.

Stated Meeting, June 26th, 1896.

A. D. BLACKADER, M.D., PRESIDENT, IN THE CHAIR.

Dr. Florence's Reaction for Seminal Stains.

Dr. D. D. MCTAGGART read for Dr. Wyatt Johnston a description of this method and demonstrated its efficacy. (See page 398.)

Discussion on the Etiology and Treatment of the Summer Diarrhœas in Children.

The PRESIDENT opened the discussion with a brief *résumé* of the facts known in connection with the etiology of the disease. He briefly referred to the potent influence which the season holds over this class of disorders. Earlier investigators were inclined to attribute the great increase in the frequency with which it occurred, and in the fatality of the disease, to the prostrating influence of the summer heat on the nervous system of the infant. Although, possibly, one of the minor factors in its production, carefully kept statistics showed that there was no close connection between the degree of heat, as evidenced by the thermometer, and the amount, or even the fatality, of the disease, but it was noted that an average daily temperature of 60 F. is necessary before the disease assumes an epidemic form, and only when the minimum temperature for the day remains higher than this does the disease become very prevalent and severe.

A brief sketch was then given of the history of our knowledge of the relation between bacteria present in milk used as infant's food, and diarrhœal disease, from which the irresistible inference was drawn that summer diarrhœa in the infant should be regarded not so much as a distinct disease *sui generis*, but rather as an intoxication or a poisoning, in which the symptoms vary according to the predominance in the affected milk or food of one or other form of pathogenic micro-organisms. Under normal conditions in the healthy infant, the acidity of the stomach affords the only protection, although an imperfect one, against the entrance of living bacteria into the intestinal canal. Any conditions, therefore, lowering the tone of the stomach, or interfering with rapid and complete digestion, open wide the portals and remove the barrier which, at the best, is not an absolute one, against the entrance of micro-organisms. While at the same time any food imperfectly digested owing, either to its having been supplied in too great quantity, or to its having been itself of an indigestible character, affords an excellent soil for their growth and development.

The results produced by the introduction of numerous forms of bacteria into the alimentary tract of an infant will vary

(1) According to their nature.—Experiments and clinical evidence show that some forms are much more toxic, owing to the character of the proteids eliminated by them, than are others.

(2) According to their numbers.—Undoubtedly an infant with healthy digestion and powers of rapidly absorbing its food may withstand the action of a considerable number of the less virulent species.

(3) According to the vulnerability of the tissues of an infant.—Infants under conditions of imperfect hygiene and delicate infants, have little resisting power and succumb easily. The comparative invulnerability of infants over two years is well marked and difficult to explain perfectly.

Just what forms are connected with special symptoms, or whether the bacteria normally found in the intestinal canal exert, under abnormal conditions, a deleterious or favourable influence, we are unable yet to say.

Regarding summer diarrhœa, therefore, as a form of intoxication and considering how imperfect our knowledge yet is of the exact action of even the principal forms of bacteria met with, it is not to be wondered at, that any exact classification of the summer diarrhœas encountered in practice is for the present impossible. A classification founded on symptoms as a basis, was long ago discarded as insufficient and misleading. Attempts have been made to classify according to the various pathological lesions found after death, but this also has been found unsatisfactory. Cases running an acute course will show only slight pathological changes ; in cases lasting from seven to ten days the lesions are more marked, but extend only to the superficial tissues ; while in the more protracted cases we generally find that the deeper tissues have been involved, and that ulceration of some of the glandular structures has taken place.

Writing on this subject Vaughan says that it would be as unscientific to attempt a classification founded upon the pathological anatomy, as it would be to designate acute, sub-acute and chronic arsenical poisoning as desquamative, catarrhal and ulcerative gastro-enteritis.

Occasionally it would appear that we have to deal not only with an intoxication, the result of toxins, elaborated by micro-organisms in the intestine, but also with a distinct systemic infection. Czerny and Moser detail the histories of some cases of gastro-enteritis in infants, in whom the presence of several forms of micro-organisms was revealed by a bacteriological examination of the blood. Before our own Society also, a paper has been recently read describing cases of systemic infection by the bacillus pyocyaneus.

The following provisional classification suggested by a Committee of the American Paediatric Society goes probably as far as our present knowledge will permit, and may prove of service to us in arranging our thoughts during the discussion. It pre-supposes that an elevated temperature of short duration points as a rule towards functional and toxic disturbances, but if long continued, indicates inflammatory lesions.

Classification of the Summer Diarrhœa of Infancy, including all forms not pseudo-membranous or due to the presence of the amœba coli

- 1. FUNCTIONAL.
  - Nervous.—Exaggeration of peristalsis from depression of nerve centres by heat, sudden chill, fright, &c.
  - Irritation.—From reflex irritation due to the presence of some irritant, such as undigested and fermenting food in canal.
  - Eliminative or Toxic.—Due to the presence and elimination of some poison or toxine.
- 2. ORGANIC.
  - Non-inflammatory.
    - Fermentive.—May be acid or albuminous; small intestine most affected. Mucous membrane generally in a state of desquamative catarrh which may be followed by inflammatory changes noted below.
    - Toxic or Choleraic.—Due to presence and elimination of poisonous toxine. Small and large intestine affected. Mucous membrane in condition of desquamative catarrh.
  - Inflammatory.
    - Catarrhal. Includes the non-ulcerative form of follicular inflammation. Ileum and colon chiefly affected. Stomach frequently involved.
    - Ulcerative.—Chiefly a follicular ulceration. Ileum and colon chiefly affected. Stomach not apt to be involved.

Either of the inflammatory varieties may occur as an acute primary disease or secondary to one of the previous forms, or as a sequence of one of the general infectious diseases.

Dr. D. J. EVANS described the mechanical treatment. (See page 296.)

Dr. F. R. ENGLAND read a paper on the dietetic treatment. (See page 292.)

Dr. G. GORDON CAMPBELL discussed the medicinal treatment, dividing the drugs used into two classes, those acting directly on the cause, and those of use to combat distressing symptoms.

In the first class were purgatives and bactericidal agents. Of purgatives, castor oil and calomel, in the speaker's opinion, were the most satisfactory, and a full dose of either one should be given at the outset of the attack to remove any irritating matter present in the alimentary canal. Calomel had the added value of being a very fair antiseptic, and when given in small oft-repeated doses, of not occasioning excessive purgation. In many cases no further treatment was required ; where, however, the diarrhœa persisted, antiseptics could be given by the mouth in the hope of preventing the fermentative changes believed to be the cause of the disease. Of antiseptics, the great difficulty was to find one sufficiently powerful to arrest the development of the micro-organisms present in the intestine, and yet not irritate the mucous membrane of the stomach sufficiently to cause its immediate expulsion, or do permanent harm. These conditions were filled by no single bactericidal agent, and hence the number of drugs recommended was very large. Among those referred to were carbolic acid, salol, salicylate of bismuth, quinine, and resorcin, and the latter possessed the advantages of being soluble, pleasant to the taste, effectual and non-irritant, as much as three grains every three hours being permissible for a child one month old.

Of the second class, Dr. Campbell thought that bismuth in large doses was of undoubted service. Its action was difficult to classify, but was probably sedative and mildly antiseptic. On the use of opium, there was much difference of opinion, but he felt that, although checking the frequency of the evacuations was not curing the disease, in many cases it was absolutely necessary to allay the griping pain, tenesmus and watery discharge which were sapping the child's strength, and no drug could compare with opium in this respect. That, if possible, one must secure rest and freedom from pain for a few hours to enable the child to recover its strength. Hence in many cases its use was indispensable.

THE

Montreal Medical Journal.

A Monthly Record of the Progress of Medical and Surgical Science.

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THE MONTREAL MEETING OF THE BRITISH MEDICAL ASSOCIATION.

Since our last issue preparations have rapidly advanced for the meeting next August. The Executive Committee and various Sub-Committees, Reception, Excursions, Museum, Printing and Publishing, Soirée, Local Entertainments, General Purposes, Finance, &c., have been appointed and are at work. Already it has been brought home to everyone connected with the Association that there is abundance to be done, and that ten months is by no means too long a time in which to do it. In our next issue we hope to publish, not only a full list of the Local Executive and the various officers appointed to do the local work, but also a list of the various Sections determined upon, and of the officers, British and Canadian, appointed by the Council of the Association in the old country to conduct the various sections. In the meantime, information as to matters in connection with the meeting will be gladly supplied by the Honorary Local Secretaries, who are three in number: Dr. J. Anderson Springle, who is mainly charged with conducting Canadian and American correspondence; Dr. J. G. Adami, who will conduct all the correspondence with England and the Home authorities, and Dr. E. P. Benoit to whom is assigned all French and French-Canadian correspondence.

It may be well to point out clearly here that only those who are members of the Association, or who are specially invited guests of the Association, are allowed to take part in the meeting and to join in the discussions in the various sections. Membership in the Association, not only gives this right of attending the meetings of the Branch and the annual gatherings of members of all the Branches, but it includes a weekly delivery of the *British Medical Journal*, to the member. The annual subscription is $5.50. To those who wish to become members, we would suggest correspondence with the Honorary Local Secretaries, or more correctly, with Dr. J. A. Springle, who is also Secretary of the Local Branch in Montreal, or again with the Secretary of one of the Canadian Branches at Halifax, Vancouver and Winnipeg. Here it may be added that membership can in general be obtained by application endorsed by three medical men who are already members of the Association. Two of those endorsing the application must certify to fitness from personal knowledge. Blank forms for this purpose can be obtained from the Secretaries abovementioned, and they would strongly suggest that those wishing to be present at the meeting next August, send in their applications within the next week or two, so that they may begin to receive the *Journal* with the beginning of the year.[1]

It may further be noted that so soon as a sufficient number of members from any district, town or city, have joined one of the existing branches, it is competent for them to apply to the Council of the Parent Association, to be constituted into a distinct and separate branch of the Association.

In making their arrangements for this meeting, the Local Executive find themselves confronted by a recent ruling of the Parent Association that none but British subjects can be accepted as members of the British Association. It had been hoped by many in Montreal that the meeting would be thrown open freely to practitioners from across the line, and very possibly in any other year, the ruling would have been amended. In 1897, however, there occurs also the International Medical gathering at Moscow, and all those connected with the government of the Association feel that it would be a grave mistake, politically and otherwise, for the Montreal branch to even seem to be attempting to conduct a rival International Meeting. So as not to create offence, the Montreal meeting must be British and not Pan-Anglican. It has however, been the custom at the meetings of the association held on the other side of the Atlantic, to invite sundry guests, and acting on this precedent, the local branch will issue definite invitations to several of the leading members of the profession in the United States. The executive feels that hereby it may be placed in a somewhat invidious position, and that, however carefully guests are selected, there will still be those who resent the absence of an invitation. It is needless to say that the very greatest care will be taken to create the minimum of offence.

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[1] We print as a separate editorial a notice received from the General Secretary of the Association.

We are glad to announce that the Government of the Dominion has generously offered $5,000 towards defraying the expenses of the meeting of the British Medical Association in Montreal.

A suite of offices, very centrally situated at 2204 St. Catherine St., opposite the English Cathedral, has been taken for the business of the Association, and all letters for the local Secretaries should be addressed thither.

BRITISH MEDICAL ASSOCIATION.

ELECTION OF MEMBERS.

Any qualified medical practitioner, not disqualified by any by-law of the Association, who shall be recommended as eligible by any three members, may be elected a member by the council or by any recognized branch council.

Candidates seeking election by a branch council should apply to the secretary of the branch. No members can be elected by a branch council unless their names have been inserted in the circular summoning the meeting at which they seek election.

FRANCIS FOWKE,
General Secretary.

LISTER AND ANTISEPSIS.

The most able address, delivered before the Canadian Medical Association by Dr. John Stewart, of Halifax, and published in the last number of the JOURNAL, forms a peculiarly opportune introduction to a portion at the least of Sir Joseph Lister's presidential address to the British Association at Liverpool in September. That "powerful and able account of the great discoveries which in the last half century have wholly changed our knowledge and our practice," aroused keen interest throughout Great Britain and, we may add, throughout this continent, and formed the texts for innumerable appreciative references in the daily press to medical men and medical advance; for it brought home to the popular understanding the progress in diagnosis and in treatment that has resulted from the active utilisation of scientific methods in the study of disease.

To us the occasion was of singular importance, in that now for the first time Sir Joseph Lister gave to the world an account of the steps by which he was led to develop that method of wound treatment which, together with the employment of anæsthetics, form the brightest and most enduring landmarks of nineteenth century surgery, a method which has assured to him a reputation co-equal with that of the greatest and most honoured of the fathers of medical science. Yet so brief and so modest, so impersonal, was Lister in the utterance of his own story, so wholly absent was the desire to magnify himself and the importance of his achievements that Dr. Stewart's address, detailing as it does, with all the love of an old pupil, the careful and laborious investigation, extending over long years, which prepared the way for Lister's great contribution to surgical practice, is a most useful adjunct to the story as told by the master—a kindly corrective to the self-depreciation which marks the master's utterance. To read Lister's own account, the evolution of antiseptic and aseptic surgery would appear the simplest, the most natural, matter possible, depending only upon his having heard fortuitously, that carbolic acid—at that time a chemical curiosity—had a remarkable deodorising effect upon sewage. Not a word is said about his long-continued researches into the nature of the inflammatory process and the insight into the meaning and causation of suppuration, which he possessed in consequence; no indication is given that he was, to all intents and purposes, the first in our profession to recognise the untold value of Pasteur's early studies upon fermentation, the first to grasp and to confirm the idea thrown out by Pasteur that putrefaction is a form of fermentation, and that thus the local putrefaction of a wound is due to micro-organisms.

Incomplete though it is, Lister's recital of his achievements possesses a rare charm, and in these days of abundant self-advertisement is peculiarly refreshing. For this reason, and again from its special interest, we feel that we cannot do better than print it *in extenso.*

After discussing anæsthesia and Pasteur's researches upon fermentation and spontaneous generation, Sir Joseph continued :

"Pasteur's labours on fermentation have had a very important influence upon surgery. I have been often asked to speak on my share in this matter before a public audience; but I have hitherto refused to do so, partly because the details are so entirely technical, but chiefly because I have felt an invincible repugnance to what might seem to savour of self-advertisement. The latter objection now no longer exists, since advancing years have indicated that it is right for me to leave to younger men the practice of my dearly loved profession. And it will perhaps be expected that, if I can make myself intelligible, I should say something upon the subject on the present occasion

"Nothing was formerly more striking in surgical experience than the difference in the behaviour of injuries according to whether the skin was implicated or not. Thus, if the bones of the leg were broken and the skin remained intact, the surgeon applied the necessary apparatus without any other anxiety than that of maintaining a good position of the fragments, although the internal injury to bones and soft parts might be very severe. If, on the other hand, a wound of the skin was present communicating with the broken bones, although the damage might be in other respects comparatively slight, the compound fracture, as it was termed, was one of the most dangerous accidents that could happen. Mr. Syme, who was, I believe, the safest surgeon of his time, once told me that he was inclined to think that it would be, on the whole, better if all compound fractures of the leg, were subjected to amputation, without any attempt to save the limb. What was the cause of this astonishing difference? It was clearly in some way due to the exposure of the injured parts to the external world. One obvious effect of such exposure was indicated by the odour of the discharge, which showed that the blood in the wound had undergone putrefactive change by which the bland nutrient liquid, had been converted into highly irritating and poisonous substances. I have seen a man with compound fracture of the leg die within two days of the accident, as plainly poisoned by the products of putrefaction as if he had taken a fatal dose of some potent toxic drug.

"An external wound of the soft parts might be healed in one of two ways. If its surfaces were clean cut, and could be brought into accurate apposition, it might unite rapidly and painlessly "by the first intention." This, however, was exceptional. Too often the surgeon's effort to obtain primary union was frustrated; the wound inflamed, and the retentive stitches had to be removed, allowing it to gape; and then, as if it had been left open from the first, healing had to be effected in the other way which it is necessary for me briefly to describe. An exposed raw surface became covered in the first instance with a layer of clotted blood or certain of its constituents, which invariably putrefied; and the irritation of the sensitive tissues by the putrid products appeared to me to account sufficiently for the inflammation which always occurred in and around an open wound during the three or four days which elapsed before what were termed "granulations" had been produced. These constituted a coarsely granular coating of very imperfect or embryonic structure, destitute of sensory nerves and prone to throw off matter or pus, rather than absorb, as freely divided tissues do, the products of putrefactions. The granulations thus formed a beautiful living plaster, which protected the sensitive parts beneath from irritation, and the system generally from poisoning and consequent febrile disturbance. The granulations had other useful properties, of which I may mention their tendency to shrink as they grew, thus gradually reducing the dimensions of the sore. Meanwhile, another cause of its diminution was in operation. The cells of the epidermis or scarf-skin of the cutaneous margins were perpetually producing a crop of young cells of similar nature, which gradually spread over the granulations till they covered them entirely, and a complete cicatrix or scar was the result. Such was the other mode of healing, that by granulation and cicatrisation ; a process which, when it proceeded unchecked to its completion, commanded our profound admiration. It was, however, essentially tedious compared with primary union, while, as we have seen, it was always preceded by more or less inflammation and fever, sometimes very serious in their effects. It was also liable to unforeseen interruptions. The sore might become larger instead of smaller, cicatrisation giving place to ulceration in one of its various forms, or even to the frightful destruction of tissue which, from the circumstance that it was most frequently met with in hospitals, was termed hospital gangrene. Other serious and often fatal complications might arise, which the surgeon could only regard as untoward accidents, and over which he had no efficient control.

"It will be readily understood from the above description that the inflammation which so often frustrated the surgeon's endeavours after primary union was in my opinion essentially due to decomposition of blood within the wound.

"These and many other considerations had long impressed me with the greatness of the evil of putrefaction in surgery. I had done my best to mitigate it by scrupulous ordinary cleanliness and the use of various deodorant lotions. But to prevent it altogether appeared hopeless while we believed with Liebig that its primary cause was the atmospheric oxygen which, in accordance with the researches of Graham, could not fail to be perpetually diffused through the porous dressings which were used to absorb the blood discharged from the wound. But when Pasteur had shown that putrefaction was a fermentation caused by the growth of microbes, and that these could not arise *de novo* in the decomposable substance, the problem assumed a more hopeful aspect. If the wound could be treated with some substance which, without doing too serious mischief to the human tissues, would kill the microbes already contained in it, and prevent the future access of others in the living state, putrefaction might be prevented, however freely the air with its oxygen might enter. I had heard of carbolic acid as having a remarkable deodorising effect upon sewage, and having obtained from my colleague, Dr. Anderson, Professor of Chemistry in the University of Glasgow, a sample which he had of this product, then little more than a chemical curiosity in Scotland, I determined to try it in compound fractures. Applying it undiluted to the wound, with an arrangement for its occasional renewal, I had the joy of seeing these formidable injuries follow the same safe and tranquil course as simple fractures, in which the skin remains unbroken.

"At the same time we had the intense interest of observing in open wounds what had previously been hidden from human view, the manner in which subcutaneous injuries are repaired. Of special interest was the process by which portions of tissue killed by the violence of the accident were disposed of, as constrasted with what had till then been invariably witnessed. Dead parts had been always seen to be gradually separated from the living by an inflammatory process and thrown off as sloughs. But when protected by the antiseptic dressing from becoming putrid and therefore irritating, a structure deprived of its life caused no disturbance in its vicinity, and, on the contrary, being of a nutritious nature, it served as pabulum for the growing elements of the neighbouring living structures, and these became in due time entirely substituted for it. Even dead bone was seen to be thus replaced by living osseous tissue.

"This suggested the idea of using threads of dead animal tissue for tying blood vessels; and this was realised by means of catgut, which is made from the intestines of the sheep. If deprived of living microbes, and otherwise properly prepared, catgut answers its purpose completely, the knot holding securely, while the ligature around the vessel becomes gradually absorbed and replaced by a ring of living tissue. The threads, instead of being left long as before, could now be cut short, and the tedious process of separation of the ligature, with its attendant serious danger of bleeding, was avoided.

"Undiluted carbolic acid is a powerful caustic, and, although it might be employed in compound fracture where some loss of tissue was of little moment in comparison with the tremendous danger to be averted, it was altogether unsuitable for wounds made by the surgeon. It soon appeared, however, that the acid would answer the purpose aimed at, though used in diluted forms devoid of caustic action, and therefore applicable to operative surgery. According to our then existing knowledge, two essential points had to be aimed at—to conduct the operation so that on its completion the wound should contain no living microbes, and to apply a dressing capable of preventing the access of other living organisms till the time should have arrived for changing it.

"Carbolic acid lent itself well to both these objects. Our experience with this agent brought out what was, I believe, a new principle in pharmacology—namely, that the energy of action of any substance upon the human tissues depends not only upon the proportion in which it is contained in the material used as a vehicle for its administration, but also upon the degree of tenacity with which it is held by its solvent. Water dissolves carbolic acid sparingly and holds it extremely lightly, leaving it free to act energetically on other things for which it has greater affinity, while various organic substances absorb it greedily and hold it tenaciously. Hence its watery solution seemed admirably suited for a detergent lotion to be used during the operation for destroying any microbes that might fall upon the wound, and for purifying the surrounding skin and also the surgeon's hands and instruments. For the last named purpose it had the further advantage that it did not act on steel.

"For an external dressing the watery solution was not adapted, as it soon lost the acid it contained, and was irritating while it lasted. For this purpose some organic substances were found to answer well. Large proportions of the acid could be blended with them in so bland a form as to be unirritating; and such mixtures, while perpetually giving off enough of the volatile salt to prevent organic development in the discharges that flowed past them, served as a reliable store of the antiseptic for days together.

"The appliances which I first used for carrying out the antiseptic principle were both rude and needlessly complicated. The years that have since passed have witnessed great improvement in both respects. Of the various materials which have been employed by myself and others and their modes of application I need say nothing, except to express my belief, as a matter of long experience, that carbolic acid, by virtue of its powerful affinity for the epidermis and oily matters associated with it, and also its great penetrating power, is still the best agent at our disposal for purifying the skin around the wound. But I must say a few words regarding a most important simplification of our procedure. Pasteur, as we have seen, had shown that the air of every inhabited room teems with microbes; and for a long time I employed various more or less elaborate precautions against the living atmospheric dust, not doubting that, as all wounds except the few which healed completely by the first intention underwent putrefactive fermentation, the blood must be a peculiarly favourable soil for the growth of putrefactive microbes. But I afterwards learned that such was not the case. I had performed many experiments in confirmation of Pasteur's germ theory—not, indeed, in order to satisfy myself of its truth, but in the hope of convincing others. I had observed that uncontaminated milk, which would remain unaltered for an indefinite time if protected from dust, was made to teem with microbes of different kinds by a very brief exposure to the atmosphere, and that the same effect was produced by the addition of a drop of ordinary water. But when I came to experiment with blood drawn with antiseptic precautions into sterilised vessels, I saw to my surprise that it might remain free from microbes in spite of similar access of air or treatment with water. I even found that if very putrid blood was largely diluted with sterilised water, so as to diffuse its microbes widely and wash them of their acrid products, a drop of such dilution added to pure blood might leave it unchanged for days at the temperature of the body, although a trace of the septic liquid undiluted caused intense putrefaction within twenty-four hours. Hence I was led to conclude that it was the grosser forms of septic mischief, rather than microbes in the attenuated condition in which they existed in the atmosphere, that we had to dread in surgical practice. And at the London Medical Congress in 1881, I hinted, when describing the experiments I have alluded to, that it might turn out possible to disregard altogether the atmospheric dust. But greatly as I should have rejoiced at such a simplification of our procedure, if possible, I did not then venture to test it in practice. I knew that with the safeguards which we then employed I could ensure the safety of my patients, and I did not dare to imperil it by relaxing them. There is one golden rule for all experiments upon our fellow men. Let the thing tried be that which, according to our best judgment, is the most likely to promote the welfare of the patient. In other words, Do as you would be done by.

"Nine years later, however, at the Berlin Congress in 1890, I was able to bring forward what was, I believe, absolute demonstration of the harmlessness of the atmospheric dust in surgical operations. This conclusion has been justified by subsequent experience; the irritation of the wound by antiseptic irrigation and washing may therefore now be avoided, and Nature left quite undisturbed to carry out her best methods of repair, while the surgeon may conduct his operations as simply as in former days, provided always that, deeply impressed with the tremendous importance of his object, and inspiring the same conviction in all his assistants, he vigilantly maintains from first to last, with a care that, once learnt, becomes instinctive, but for the want of which nothing else can compensate, the use of the simple means which will suffice to exclude from the wound the coarser forms of septic impurity.

"Even our earlier and ruder methods of carrying out the antiseptic principle soon produced a wonderful change in my surgical wards in the Glasgow Royal Infirmary, which, from being some of the most unhealthy in the kingdom, became, as I believe I may say without exaggeration, the healthiest in the world; while other wards, separated from mine only by a passage a few feet broad, where former modes of treatment were for a while continued, retained their former insalubrity. This result I need hardly remark, was not in any degree due to special skill on my part, but simply to the strenuous endeavour to carry out strictly what seemed to me a principle of supreme importance.

"Equally striking changes were afterwards witnessed in other institutions. Of these I may give one example. In the great Allgemeines Krankenhaus of Munich, hospital gangrene became more and more rife from year to year, till at length the frightful condition was reached that 80 per cent. of all wounds became affected by it. It is only just to the memory of Professor von Nussbaum, then the head of that establishment, to say that he had done his utmost to check this frightful scourge; and that the evil was not caused by anything peculiar in his management was shown by the fact that in a private hospital under his care there was no unusual unhealthiness. The larger institution seemed to have become hopelessly infected, and the city authorities were contemplating its demolition and reconstruction. Under these circumstances, Professor von Nussbaum despatched his chief assistant, Dr. Lindpaintner, to Edinburgh, where I at that time occupied the chair of clinical surgery, to learn the details of the antiseptic system as we then practised it. He remained until he had entirely mastered them, and after his return all the cases were on a certain day dressed on our plan. From that day forward not a single case of hospital gangrene occurred in the Krankenhaus. The fearful disease pyæmia likewise disappeared, and erysipelas soon followed its example.

"But it was by no means only in removing the unhealthiness of hospitals that the antiseptic system showed its benefits. Inflammation being suppressed, with the attendant fever, pain, and wasting discharge, the sufferings of the patient were, of course, immensely lessened; rapid primary union being now the rule, convalescence was correspondingly curtailed; while as regards safety and the essential nature of the mode of repair, it became a matter of indifference whether the wound had clean cut surfaces which could be closely approximated or whether the injury inflicted had been such as to cause destruction of tissue. And operations which had been regarded from time immemorial as unjustifiable were adopted with complete safety.

"It pleases me to think that there is an ever-increasing number of practitioners throughout the world to whom this will not appear the language of exaggeration. There are cases in which, from the situation of the part concerned or other unusual circumstances, it is impossible to carry out the antiseptic system completely. These, however, are quite exceptional; and even in them much has been done to mitigate the evil which cannot be altogether avoided.

"I ask your indulgence if I have seemed to dwell too long upon matters in which I have been personally concerned. I now gladly return to the labours of others."

McGILL UNIVERSITY MEDICAL LIBRARY.

We have received from the Librarian the following report, which we are glad to print, showing, as it does, that both in the number of those making use of the collection and of those contributing additional volumes the library has made marked advance during the past year.

The donations to the library during the past year include a valuable addition to the Obstetrical and Gynæcological Department from Dr. J. C. Cameron, comprising sets of rare and valuable journals.

The library is indebted to Dr. F. J. Shepherd for the gift of a very interesting collection of old letters from celebrated physicians, as well as some old Montreal Medical Tariffs, and to the editors of the MONTREAL MEDICAL JOURNAL for numerous unbound medical periodicals, etc.

The libraries of the Surgeon-General's Office, U.S. Army, Boston Medical Library, Ontario Medical Library, have been most generous in their contributions. To the College of Physicians of Philadelphia, St. Bartholomew's Hospital, Middlesex Hospital, Association of American Physicians, Johns Hopkins Hospital, Rhode Island Medical Society, Association of American Physicians, Medical Association of Central New York, St Thomas's Hospital, Geological Survey of Canada, and the Provincial Board of Health, the library is also indebted for contributions.

The library is indebted to the following authors for copies of their works:

Dr. G. E. de Schweinitz—Diseases of the Eye.
Dr. G. M. Gould—Borderland Studies.
Dr. S. G. Hubbard—Biographical Sketch of the late Prof. Henry Bronson.
Prof. Wesley Mills—The Dog in Health and Disease.
Dr. W. Osler—Practice of Medicine.
Dr. L. C. Webster—Female Pelvic Anatomy; Tubo-peritoneal Ectopic Gestation.

It has also received the following, for which it is much indebted to the contributors:

Dr. J. C. Cameron—Lectures on Obstetric Operations, by Robert Barnes, M.D.; Science and Art of Midwifery, by William Thompson, M.D.: Antiseptics in Obstetric Nursing, by John Shaw, M.D.; Lectures on Obstetric Nursing, by Theophilus Parvin, M.D.; First Lines in Midwifery, by G. Ernest Herman, M.B., F.R.C.P.; Handbook of Obstetric Nursing, by Francis W. N. Haultain, M.D., F.R.C.P. Ed., and J. Haig Ferguson, M.B., F.R.C.P. Ed.; Traité du Palper Abdominal, by A. Pinard, M.D.; English edition of the same, translated by L. Neale, M.D.; Manual of Midwifery, by Alfred Meadows, M.D., F.R.C.P.; American Text-book of Obstetrics; Lehrbuch der Hebammenkunst; Grundriss der Gynäkologischen Operationen, von M. Hofmeier; Münchener Medicinische Wochenschrift; Thèses for 1886; ten volumes of the British Gynaecological Journal; twenty-two volumes of the American Journal of Obstetrics; three volumes of the London Obstetrical Journal; Complete set of the Répertoire Universel d'Obstétrique et de Gynécologie; three sets of the earlier numbers of the Montreal Medical Journal.

Dr. F. J. Shepherd—Medical Hand-book of Life Assurance, by James Edward Pollock, M.D,, F.R.C.P.; New York Medical Rocord; Journal of the American Public Hea th Assoc.; Maritime Medical News; Canadian Practitioner; Cutaneous and Genito-Urinary Diseases; Canada Medical Record; La Tribune Médicale; University Medical Magazine; a large collection of pamphlets.

Dr. A. D. Blackader—Text-book of Practical Therapeutics, by Hobart Amory Hare, M.D., B.Sc.; Archives of Pediatrics; Transaction of Pediatrics; International Medical Magazine; four volumes of New York Medical Record; Pamphlets.

Dr. R. C. Kirkpatrick—Chronic Diseases of the Organs of Respiration, by John Meyhoffer, M.D.; Report of the Montreal Training School for Nurses; Life of Hayes Agnew, M.D., LL.D., by J. Howe Adams, M.D.; Treatise on Ulcers, by Benjamin Bell, M.D.; Mineral Springs and Health Resorts of California, by Winslow Anderson, M.D.; Observations on Certain Parts of Animal Economy, by John Hunter, F.R.S.; Annals of Surgery; Commentaries upon the Aphorisms of Dr. H. Boerhaave; Pamphlets.

Miss Flora McKay—Three volumes of the Cyclopædia of the Practice of Medicine, by John Forbes; Description of the Jail Distemper as it appeared among the Spanish Prisoners, by James C. Smyth; Practice of Medicine, by John Galt, M.D.

Dr. J. G. Adami—Consumption: its Nature, Causes and Prevention, by E. Playter, M.D.; Introduction to the Osteology of the Mammalia, by William Henry Flower, F.R.S., F.R.C.S.; Elements of Embryology; A Course of Elementary Instruction in Practical Biology, bv T. H. Huxley, LL.D.; Annual of the Universal Medical Sciences; Tr. of the Congress of American Physicians and Surgeons; Journals and Pamphlets.

Dr. W. Gardner—Journals.

Dr. Osler—Phonographic Record.

Dr. J. Stewart—Wiener medizinische Wochenschrift.

Dr. W. Johnston—Verhandlungen der Physicalisch-Medicinischen Gesellschaft; Pamphlets.

Dr. R. F. Ruttan—Animal Physiology, by Wesley Mills, M.A., M.D., L.R.C.P.; Pamphlets.

Dr. F. G. Finley—Animal Physiology, by Wesley Mills, M.A., M.D., L.R.C.P.; A Course of Elementary Practical Physiology, by M. Foster, M.D., F.R.S.

Dr. G. E. Armstrong—Boston Medical Journal.

Dr. E. Cola Hebbard—Philosophy of the Three Ethers, by William Thornton.

Dr. T. D. Reed—Materia Medica and Therapeutics, by John B. Biddle.

Dr. J. W. Flinn—Journals.

The number of readers making use of the Library from June 1st. 1895, to June 1st, 1896, has been 4,875.

During the year 400 new books and periodicals and 1,100 pamphlets have been added.

QUACK MEDICINES AND FORGED TESTIMONIALS.

We herewith print a letter received from an English physican, whose rising reputation has been seized upon by the unscrupulous vendors of a quack medicine, to push the sale of their nostrum.

We have heard of other instances of such bare-faced forgery. Only a few weeks ago a Californian newspaper was shown to us, containing what purported to be letters commendatory of another quack medicine from leading physicians associated with McGill University, from the late (though this was not mentioned) R. P. Howard and George Ross and from Dr. W. Osler. The forged letters were published thousands of miles away. In Dr. Ransom's case the testimonial was boldly distributed to those living in his immediate neighbourhood. The impudence of the whole matter is aggravated by the fact that Dr. Ransom is a man of singular culture, a writer of refined style, and a physican, who to our knowledge, has not undertaken the treatment of genito-urinary troubles.

Dr. Ransom writes to us,

THE PAVEMENT, NOTTINGHAM, ENGLAND, Sept 5th, '96.

SIR,—

There has this week been sent to medical men in England a pamphlet advertising an American nostrum called Sanmetto. In this pamphlet is what purports to be a testimonial from me.

This is an absolute Forgery, as I have never used or in any way recommended the drug.

I shall be obliged if you will kindly publish this disclaimer, and draw attention to this latest and most iniquitous development of business "enterprise." I enclose a copy of the testimonial and have to add that I am taking legal advice as to how to stop and punish the fraud.

Yours faithfully,

W. B. RANSOM.

The forgery is inserted in what appears to be a periodical advertisement entitled "The Witness Box" No. 4, published by the Od Chem, Co., No. 15 Cedar Street, New York; London Office, 36 Basinghall Street, and it reads:—

HURRAH FOR SANMETTO.

W. B. Ransom, M.A., B.Sc., M.D., M.R.C.P. Lond., M.R.C.S., Fell. Roy. Med-Chir. Soc., Phys. Nott. Gen. Hosp., Balwell, Nottingham, England, says: Hurrah for Sanmetto! My results from its use in bladder cases astonished my confrères. In gonorrhea (sic.) its effect is nothing short of magical.

PROCEEDINGS OF THE CANADIAN MEDICAL ASSOCIATION.

We present to our readers, in this number of the JOURNAL, an abstract of the able address delivered by Sir William Hingston at the Hôtel Dieu Hospital, before the members of the Canadian Medical Association.

We regret that the official reporter furnished us with such a brief and imperfect report of this address, as well as of Dr. Stewart's interesting clinic at the Royal Victoria Hospital, as appeared in our last issue.

ANTITOXIN COLLECTIVE INVESTIGATION (SECOND) AMERICAN PEDIATRIC SOCIETY.

To the Profession :—

The American Pædiatric Society are encouraged to ask the co-operation of the profession in a further collective investigation. Laryngeal diphtheria is believed to furnish a crucial test for antitoxin : the present aim is to ascertain (1) What percentage of cases of laryngeal diphtheria recover without operation, under antitoxin treatment ; (2) What percentage of operated cases recover.

The Society asks for records of *diphtheria involving the larnyx whether operated or not, occurring in private practice in the United States and Canada, treated with antotixin.* It is expected that cases occurring this year will be treated with reliable preparations of the serum, will be treated early and will be given efficient doses. The second report is designed to be a study of cases occurring between the closing of the first report, May 1st, 1896, and the closing of the present collective investigation, April 1st, 1897.

In order to secure data which shall make the tables complete, circulars containing blanks for ten cases have been printed and are now ready for distribution. It is desired that physicians shall fill out circular blanks as cases occur, not trusting to memory, and shall urge their friends having similar cases, to do the same. Circulars can be had by applying to the committee (address below). Several groups of cases in the first investigation arrived too late and were lost to the report. It is desired that circulars as soon as filled (ten cases) be returned to the committee. The collection of cases must close at the end of March, 1897.

For extra circulars (blanks), for returning circulars (filled) and for further information, address the chairman of the committee,

W. P. Northrup, M. D.,
57 East 79th Street,
New York, N.Y.

October, 1896.

In connection with the above we are asked to re-insert the following :

THE ACTION OF THE SOCIETY UPON THE FIRST REPORT.

At the close of its presentation, the Society voted to accept the report of the Committee and after a full discussion it was decided to embody its conclusions in the following resolutions :

(1) *Dosage.* For a child over two years old, the dosage of antitoxin should be in all laryngeal cases with stenosis, and in all other severe cases, 1500 to 2000 units for the first injection, to be repeated in from

eighteen to twenty-four hours if there is no improvement; a third dose after a similar interval if necessary. For severe cases in children under two years, and for mild cases over that age the initial dose should be 1000 units, to be repeated as above if necessary; a second dose is not usually required. The dosage should always be estimated in antitoxin units and not of the amount of serum.

(2) *Quality of Antitoxin.* The most concentrated strength of an absolutely reliable preparation.

(3) *Time of Administration.* Antitoxin should be administered as early as possible on a clinical diagnosis, not waiting for a bacteriological culture. However late the first observation is made, an injection should be given unless the progress of the case is favourable and satisfactory.

The Halifax branch of the British Medical Association, has commenced its usual winter session. Dr. W. Tobin has been elected President for the ensuing year.

NEW BOOKS, ETC, RECEIVED AND NOTED.

Supplementary Report on the success of Electrolysis in the treatment of Urethral Strictures. By Robert Newman, M.D. Reprint from The Journal American Medical Association, May 25th, 1895.

Transactions of the Association of American Physicians. Vol. XI, 1896.

An American Text-Book of Physiology. Edited by Wm. H. Howell, Ph.D., M.D. W. B. Saunders.

An American Text-Book of Applied Therapeutics. Edited by J. C. Wilson, M.D., and Augustus A. Eshner, M.D. W. B. Saunders.

A Practical Treatise on Materia Medica and Therapeutics. By Roberto Bartholomew, M.A., M.D. D. Appleton & Company.

Royal Infirmary Cliniques. By Alexander James, M.D. Oliver & Boyd.

Deformities. By A. H. Tubby, M.S. Macmillan & Co.

Practical and Operative Gynaecology. Dy J. Clarence Webster, M.D. Young J. Pentland.

Section Cutting and Staining. By W. S. Colman, M.D. H. K. Lewis.

A Handbook of Surface Anatomy and Land Marks. By Bertram C. A. Windle, M.D. H. K. Lewis.

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Original Addresses.

INTRODUCTORY LECTURE
ON
HYGIENE, PUBLIC HEALTH AND PREVENTIVE MEDICINE.

BY
ROBERT CRAIK, M.D., LL.D.,
Dean of the Faculty of Medicine, McGill University, Professor of Hygiene.

In beginning the study of a new subject, it is always well to obtain as clear a view as possible of the field which is to be explored and cultivated; its scope, its limitations, its possibilities and the nature of the work which is to be performed in it; and the more clearly these are understood at the beginning, the more intelligently and successfully will the work be carried on.

In entering, therefore, upon our reorganized course of Hygiene, I have thought it well to devote a short lecture to a survey of the ground to be covered, and an outline of the manner in which we propose to utilize it.

It is impossible in a single word or sentence to define what Hygiene is, or what are its scope and its limitations. The word itself means *health*, or things pertaining to health, being derived from the name of the Greek Goddess of Health, Hygeia, and in its widest sense, therefore the study of Hygiene means the study of all things pertaining to health, whether beneficial or detrimental. This, of course, includes the study of Disease, which is strictly a department of Hygiene on account of the effect which disease has upon health. But the *Science of Medicine* has long since claimed as its own particular province, the study of Disease, and Hygiene has been glad largely to concede the claim, having still an ample territory over which there can be no dispute. But there is also a large area which is common to both, and over which neither can claim exclusive jurisdiction.

Health and Disease may be looked upon as the antithesis of each other, having much the same relations as light and darkness, pleasure and pain, good and evil. But opposite as these things may seem to be, we cannot in our minds disassociate them, for light would scarcely be realized as light if we were ignorant of darkness, pleasure would scarcely be so enjoyable if we had never felt pain, and we could scarcely fix a standard of health, if it were not possible to contrast it with disease.

In this way the study of Medicine and the study of Hygiene meet and overlap each other, the one cannot properly be understood without some knowledge of the other ; the Physician in studying Disease fixes his attention upon those points in which it differs from Health, while the Hygienist in adjusting his standard of Health must be able to recognize the signs and symptoms which indicate Disease.

This common ground of study between the Physician and the Hygienist or Sanitarian, instead of producing antagonism or divergence, really binds them together, the studies of the one passing imperceptibly into those of the other, so that every Physician becomes more or less a Hygienist, and nearly every Hygienist becomes, or at least qualifies himself to be a Physician. Both are working to rid the world as much as possible of Disease, but while the Science of Medicine aims both at the prevention and cure of Disease, the Science of Hygiene occupies itself almost wholly with its prevention ; and inasmuch as prevention is always better than cure, Hygiene as a part of Medicine is assisting in the noblest part of its work.

It may be said therefore, that the peculiar province of Hygiene is,—the study and practice of all those means that tend to preserve and to improve health, and to prevent disease.

In its most comprehensive sense it includes all living things, but in its usual restricted sense it applies more particularly to the human race, with it subdivisions into states or nations, provinces, communities, families and individuals ; a common sub-division of the subject being into : (*a*) private or individual Hygiene ; (*b*) public Hygiene and (*c*) international Hygiene.

In its highest sense also, Hygiene concerns itself not only with the physical health of individuals and communities, but also with their mental, moral and even their political health.

We have seen that the functions of the sanitarian and of the physician, though having much in common, differ chiefly in that the one studies health and endeavours to preserve it, while the other studies disease and endeavours to cure it, and their relative spheres of action seem tolerably well defined.

But though in the abstract, health and disease seem to be almost the opposite of each other, in practice they are found often to shade almost insensibly into each other, making it difficult to tell where the one ends and the other begins, and making it impossible to give an exact scientific definition of either of them. Perhaps the simplest definitions are,—that health means that condition in which all the functions are performed naturally, while disease means a condition in which at least some of the functions are more or less unnatural. In these definitions, of course the whole difference turns upon what is to be understood as natural or unnatural, and how are we to decide as to what is natural?

We shall probably find the nearest approach to it in the average course of existence of indivduals in a prosperous community. They spring from a healthy parentage; they are born at full time; they grow to healthy maturity; they produce healthy off-spring; they gradually fade and wither; they die peacefully and return harmlessly to dust.

But disease may alter all this; parentage may be unwholesome or depraved; birth may be difficult or untimely; growth may be irregular or stunted; progeny may be misshapen or feeble, or may be wanting altogether; age may be laden with infirmities; death may come at any time in a virulent and painful form; and even the lifeless clay by reason of its virulence may spread pestilence and death among thousands of innocent victims. How different the pictures. Health represents peace, happiness and prosperity;—disease represents grief, misery and disaster.

What nobler work, then, than to strive to blot out the latter, and to develop the former to still greater excellence?

But, it may be asked, how far is it possible to exterminate disease and to replace it by health and soundness. Theoretically it ought to be possible to exterminate disease, inasmuch as it is an unnatural condition, and by strict obedience to natural laws, it ought to be made to disappear. But natural laws, like all other laws, are constantly broken; and indeed anything like perfect obedience to them is scarcely to be expected. They are often imperfectly understood, and when understood they are often beyond our control, and only a partial success in our work can therefore ever be looked for.

But though we can never hope to completely eradicate all diseases, we may confidently expect to exterminate a large number of them, and to so modify and control a still greater number, as to render them comparatively harmless, thus reducing the sum total of misery and mortality in a very important degree. In proof of this we have only to think of what vaccination has done for smallpox, what anti-toxin is now doing for diphtheria, what improved sanitary measures have done for typhus fever, for scurvy and for preventing the spread of cholera and other epidemics ; and in Sanitary Science, as in the other Sciences, it seems impossible to limit the extent to which progress and improvement are to be carried.

And how have these successes been achieved ? By carefully studying the laws of Health and the natural (or unnatural) history of Disease, and by applying for their elucidation the modern methods of scientific investigation.

Physiology teaches that in an ideal state of health, in adult life, the metabolism of the tissues and organs is perfect : that the processes of waste and regeneration exactly balance each other, and that to maintain this balance, the ingesta and excreta must be in corresponding proportion. Were it possible in a healthy body, and with pure materials, always to maintain this equality, it would seem that the process should go on indefinitely, and that something approaching immortality should result ; but with our earthly environment no such perfection is possible ; under the most favourable circumstances the metabolism is only approximately perfect, the materials are only approximately pure, and almost from the beginning, a process of gradual deterioration commences, which, aided by other influences, ultimately ends in degeneration and death, and this without the supervention of what can properly be called Disease, but only as the result of processes rendered imperfect by complex disturbing forces which pervade our whole surroundings.

As I have said, this process is not Disease. There is nothing unnatural about it ; it is common to all living things with which we are acquainted, and when it ends in the usual way, we say death has resulted from natural causes or from natural decay ; indeed we are constrained to accept this result as the nearest approach to perfect Health which is attainable in this world. It is in short the natural or normal condition of all earthly living things.

If then we are to accept this as our type of Health, what is Disease supposed to be ? It must at least be something appreciably different, either in degree or in quality ; something added, something taken away, or something altered and perverted. A change sufficient to convert a natural or normal process into one which is measurably unnatural or abnormal.

It is the function of the Sanitarian by all means in his power to *prevent* these changes. When the changes have occurred it becomes the function of the physician to endeavour to remove or counteract them and restore the processes to their natural or normal condition.

But to be in a position to prevent Disease, the Sanitarian must endeavour to ascertain its causes, and the manner in which these causes react upon the organism in producing Disease.

As Health is dependent upon the maintenance of a proper balance between all the functions, and an adequate supply of pure materials to repair the constant waste, and maintain the healthy integrity of the tissues and organs, we naturally look for the causes of Disease among those circumstances likely to disturb this balance, or to vitiate or destroy this healthy integrity of structure.

The causes of Disease, however varied and numerous, may virtually all be said to act by interfering with or vitiating healthy nutrition. Most of them are connected with the ingesta and find entry to the system along with them, being either normal ingredients in improper proportion, or foreign substances abnormally mingled with them. Such causes are to be met with in the air we breathe, in the food we eat, and in the fluids we drink. Certain other active causes find entrance through wounds or abrasions, and still other causes and influences react upon the body from without, such as changes of temperature or of atmospherie pressure, physical and mental exhaustion, &c.

Among all these causes of Disease none have of late years attracted so much attention as those connected with the so-called Germ Theory. The class of Infectious or Zymotic Diseases, with others analogous to them, having been shown to depend upon specific organisms or germs for their origin and propagation, the study of these organisms in all their relations to disease has distinctly been brought within the province of Sanitary Science.

The constantly improving processes of Chemical and Physical research are also being daily brought more and more into the work of Sanitary investigation, more particularly with reference to air and ventilation, water and other beverages, and food with its adulterations. In like manner some knowledge of Architecture and Engineering, as applied not only to private dwellings, but to hospitals, schools, prisons and other public buildings, as well as to systems of drainage and other matters, is every day becoming more imperative.

There are many other directions in which Sanitary Science is extending its boundaries, and the area over which it is exercising control is daily widening in all matters in which the health of individuals and communities is concerned.

The hitherto prevailing system of the Unification of Sanitary Science is therefore no longer adequate to its requirements. No single teacher, however versatile and accomplished, can longer hope to do even moderate justice to so extensive a subject ; but thanks to the generous endowment of this Department by our Chancellor, Sir

Donald A. Smith, we are at last able to extend the scope of its teaching in a degree commensurate with its importance, and to give to it that Composite character which the diversity of its interests demands. We have been able to secure for Hygiene the active co-operation of workers in other Departments of the Faculty. Dr. Ruttan, Professor of Practical Chemistry, who has been associated with me for several years, will still further extend the work in Sanitary Chemistry and Physics, more particularly in connection with water, soil, food and air ; while Dr. Adami, Professor of Pathology, and Dr. Wyatt Johnston, Lecturer in Bacteriology and Medico-Legal Pathology, will contribute a very complete course of instruction in Bacteriology in its relations with Preventive Medicine. This part of the course will include the Biology of the Bacteria, methods of culture, staining and sterilization, bacteriological examination of water, air, soil and animal fluids and secretions, antisepsis of wounds, Serum Therapy, Epidemiology, disinfection, quarantine, &c.

Ample means of illustration, with Microscopic and Laboratory facilities will be avaiable in every part of the course ; and to make the means of illustration still more effective, an extensive working museum of models, specimens, diagrams and Sanitary apparatus of every kind is being prepared, and will add greatly to the efficiency of the course.

It is hoped also that a portion of the Lectures on Architecture and Engineering in the Faculty of Applied Science may, by suitable reciprocal arrangemonts, soon be made available for students in Hygiene.

In thus expanding the course and providing for additional study in many directions, care has been taken in the interest of the students, not unnecessarily nor unduly to increase their labour ; for much of the additional work will be utilized in other Departments, chiefly in Pathology and Practical Chemistry, so that unnecessary repetition and duplication may be avoided.

The course of Hygiene, Public Health, and Preventive Medicine as thus remodelled and extended, will henceforth take rank as a full course, becoming one of the most prominent of the third year, a position to which it is fully entitled by its constantly increasing importance.

In concluding this short address, let me remind you, that we do not expect, even with our extended course and facilities, to make you expert Specialists in Sanitary Science, or to qualify you without further preparation to undertake the duties of Public Officers of Health ; but we do expect of you that you will acquire a good knowledge of the principles of the Science, and a sufficient knowledge of its details, to become intelligent critics and safe advisers in all matters connected with Sanitary work.

THE RESPONSIBILITY OF THE STUDENT OF MEDICINE.

BY
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Another academic year has rolled by, and to-day marks the official opening of the sixty-fourth session of the Faculty of Medicine. I say official advisedly, for at least three-fourths of your number have already some time since girded your loins after the summer siesta and started in earnest on the steep and rugged path which leads to the tree of knowledge and, let us hope also the fountain of wisdom. I trust, nevertheless, that a few of the things I wish to say to you may not savor too much of, as the French say, *après diner moutarde*—and that my remarks may be of assistance both to those who are on the road and to those whose journey begins to-day. If one may judge from one's personal experience, a word of advice comes not amiss in such circumstances. I can recollect distinctly the feeling of helplessness, of vague groping and uncertainty, that came over me at certain periods of my medical course—particularly the introduction to a new and unfamiliar class of studies—and many times the advice of a senior college mate or, better still, of one of my teachers served to dispel doubt and bring light out of darkness.

In the first place, on behalf of my colleagues in the faculty, I extend to you all a cordial welcome, none the less cordial because official and collective. You obtain thereby your place in the sphere of intellectual effort, in which we are all units striving toward a common goal. the furthering of the science and art of medicine, and co-incidently of medical education.

Those of you who are entering these class-rooms for the first time may possibly not have realized the responsibilities—immediate and prospective, and they are not light ones—which such a step entails, The immediate responsibility is that of working earnestly to the best of your ability during the four years of your course, acquiring such knowledge of, and skill in your profession as will make you a credit to the institution that has given you your training and conferred upon you a widely-known and respected degree. The prospective responsibility is the one contained in the oath exacted from you on your graduation-day—to practice medicine: *Caute, caste et probe.* Of the latter I shall say nothing. It shall be the duty of one of my colleagues, ripened in years and wisdom, to enforce its solemn simplicity upon a chosen few of you at the end of this session.

It is of the first of these responsibilities that I wish to speak. You are beginning, or have begun, the study of medicine presumably with the view of eventually practising that profession. For prudential reasons—to take the lowest motive first—it behooves you from the first to make the very best use of your time. Competition—sharp, not to say at times unscrupulous—which has made mercantile pursuits so uncertain, and in many cases but barely remunerative—has of late years rapidly invaded the professional classes, and medicine in this respect has suffered perhaps more than any other profession.

The absence of state-endowed and state-supported institutions, in which a very high standard of education might be maintained irrespective of revenue, the absence or laxity of state regulation, of private educational corporations, the curse of sectionalism and individualism so characteristic of the western hemisphere, and the apathy of the public in the matter of education in general and medical education in particular—all these factors have tended to produce a mushroom-growth of so-called medical schools (fortunately be it said more among our neighbours than in our own country) from which a yearly brood of doctors of medicine has been delivered upon the unsuspecting public. To many people one degree is as good as another, and it will take them some time, to their cost, and perhaps to yours, before they appreciate the difference between a graduate of a reputable school and one of the mushroom variety. Moreover, your training will have taught you to despise methods which your competitor makes no scruple of using—and in this respect you will be at a disadvantage. But granted that in the long run you have little to fear from competition with the ill-trained physician, is it not a fact that even from the best medical schools the supply of graduates is at least equal to the demand? Ponder this well—if there be any of you who may be tempted to think that a degree is to be won by a minimum of work, and that the profession of medicine is an easy and genteel way of earning a living. For such there is no place in a medical school of the highest standing.

But there is a higher motive, which the majority, if not all of you, will recognize and accept. By working to the best of your ability you are in reality aiding, no matter how little, the cause of higher education in medicine. Wherever you go, in whatever place you cast your lot, you will bear the hall-mark of your Alma Mater, and should be the living embodiment to your surroundings of the high professional ideal which this school has ever aimed at maintaining. This you cannot be unless you make up your mind from the first to utilize to the fullest extent the great advantages that are offered to you throughout your collegiate course. Moreover, by so doing you will materially lighten the labours of your teachers, and stimulate them to yet greater efforts on behalf of yourselves and those who shall follow in your footsteps.

The highest motive is one that should form part of your very nature, if you are rightly constituted. It is the moral obligation to do your duty by your fellow-creatures. No student can conscientiously receive the degree of doctor of medicine who knows and feels that he has not caused to profit the talent that was entrusted to him. Heaven knows, gentlemen, when you leave these halls—it has been the experience of your predecessors and teachers—your store of knowledge will be scanty enough, even if you have diligently employed your time—a fraction with a very small numerator, and it is with this fraction that you must enter upon your life work—the understanding and care of all the ills the flesh is heir to.

If a due sense of responsibility is incumbent upon you, the majority, who are to become practitioners of medicine, it is all the more imperative for you, the minority—and I trust it may be a large one—who are even now cherishing the idea of yourselves becoming the teachers of a future generation of students, or investigators in one of the many unexplored regions of medical science. The teacher or investigator to be successful must have received the very best possible training, a deep and solid foundation on which to rear a no less solid and harmonious superstructure. In the case of either, failure means not only personal loss from wasted opportunities, but incalculable and progressively increasing harm to others through educational incapacity or lack of "geist," and the publication of immature or faulty researches—for there is none like your practising physician or surgeon to accept without a murmur of dissent the dicta of those who speak *ex cathedrâ*, be it from the professor's chair or the holy of holies of the laboratory.

How shall you make the best use of your time?—avoiding both Charybdis and Scylla; the whirlpool of overwork, perplexity and ill-health; and the dangerous rocks of temptation, neglect of work and failure. To a great degree this problem has been solved for you in the published time-table of the curriculum. There are, at fixed hours, arranged with due regard to your physical welfare, lectures, clinics and demonstrations to attend, which will fairly well fill the hours of the day. With regard to these let your chief virtues be punctuality and attention, for your own sake and that of your teachers and fellow-students. The aim of these various exercises is to teach you to *observe* and to *think*. And here let me repeat the oft-given but ever necessary advice concerning note-taking. Your teachers profess to be exponents, not oracles, and do not expect you to make a stenographic report of their dissertations—a lecture is not to be considered in the light of an exercise in dictation. Note, if you will, the salient points, and at the close of the day you may fill in the minor points at your leisure ; it is a good mental exercise and serves to cultivate the memory. Avoid mere memorizing ; it is a debasing exercise and will inevitably lead you to the vain and idolatrous worship of facts Facts are necessary, and those which cannot be established by personal observation must of course be obtained from books, demonstrations or lectures ; but they are at best means to an end, and of little value apart from the inferences to which they lead and the principles of which they form the basis.

Might I not add a word of warning to the teachers themselves ? We are perhaps addicted to laying too much stress on the practical side of the subjects we teach, assimilating our work more or less to the style of the modern text-book, which is too often a mere agglomeration of facts, true and well-established if you will for the time being, but devoid of that stimulus to thought which the scholarly and philosophical presentation of the growth and development of principles would afford. This defect I freely admit to be more common in the treatment of the final branches of the curriculum than in that of the primary. The ideal series of didactic lectures would be one that dealt with groups of allied morbid conditions, rather than individual ones, showing their fundamental relations, tracing the gradual steps by which the members composing them became differentiated, and outlining the trend of modern thought in the solution of the still vexed questions with which they abound. In other words, the tendency of such lectures would be toward synthesis rather than toward analysis. The penchant of the present period of medicine is towards refinement in subtle distinctions and the investigation of minutiæ, which too often result in loss of mental perspective and the consequent inability to grasp broad principles. The type of the ideal lecture I have referred to is well illustrated by the admirable lectures on "Convulsive Seizures," delivered a few years ago by the eminent London neurologist, Hughlings Jackson, in which he develops the theory of functional levels in the central nervous system. Such lectures not only give one a more accurate conception of individual morbid conditions, but throw a new light on familiar phenomena, and open up new avenues of thought and speculation.

Clinics and clinical lectures on the other hand are, or should be, intensely objective, their aim being to cultivate the faculty of observation. It is remarkable in what an embryonic state this faculty exists in the average student. Things that "jump to the eyes," as the French say, very commonly pass unobserved, or in transit between the retina and the higher visual centres undergo such refraction as to result in very imperfect images. Indeed a large part of the clinical teacher's work consists in correcting visual, auditory and tactile impressions in the student, and as this work of educating the senses must of necessity be done individually for each student, it follows that a large proportion of time must be devoted to this part of your technical training. It requires also individual work, *bon-vouloir* and patience on the part of both teacher and pupil. Nothing but the most earnest co-operation on your part can make our teaching successful, for indifference in the taught represses the zeal of the teacher, and freezes the genial current of his soul.

There are in this city ample, very ample, facilities for the acquirement of a good clinical training in large and well-appointed hospitals. It is safe to say that in no other city on this continent is the student in medicine afforded such opportunities of seeing disease from a close and intimate point of view, and of coming into personal contact with the sick. As senior students you are practically allowed the freedom of the wards during certain hours of the day, and all of you have at one time or another a certain number of cases to report on and observe from day to day. In the out-patients department you have daily opportunities of studying the minor complaints, both medical and surgical, which will form the largest part of your future practice, and of familiarising yourselves by repeated examinations, with normal physical signs. Finally, there are the special departments and the maternity hospital, in which systematic instruction is given to groups of students in rotation.

These are great and exceptional advantages, and if you are inclined to think that they are but your due, remember that in many hospitals not only is the opportunity of personally examining and reporting cases absolutely unknown—I had almost said undreamed-of—but access to the wards is only possible in the company of the chief of service or his interne, and the student must rest satisfied with studying disease from the lofty point of view of the amphitheatre. This school can point with pardonable pride to the fact that it was among the first in America to inaugurate thorough and systematic bedside teaching in the hospital, and to insist on personal and individual clinical work. And here I may be pardoned for entering upon a digression. The system of teaching I have referred to is commonly known as the "Edinburgh method." In reality, it is the German method—though it eventually came into force in the famous Scotch school. Graves, in the introduction to his "System of Clinical Medicine" (published in 1843), speaking of methods of clinical teaching, draws attention to the lack of personal work on the part of the student in the medical schools of Great Britain, and contrasts these with the schools of France and Germany. In France the system adopted was certainly an improvement on the methods in vogue in his own country, but there were still many defects. For the German method, however, he has nothing but praise, and describes somewhat in detail the manner in which the "praktikant" is required to examine, report and even prescribe for cases in the hospital, undergoing on all these points a strict cross-examination by the physician in the presence of his fellow-students.

To return to the theme; I wish to insist on the point that in clinical work you are to be actors, not passive spectators or supernumeraries on the scene. Avoid perfunctory performance of your hospital duties, and when you are reporting a case do so with as much zeal as if it were your first patient in practice. There is no better training than that obtained by thorough and independent examination at the bedside, controlled subsequently by your teacher's criticism. The eliciting of information, the careful sifting and arrangement of the patient's statements—one of the most difficult arts to acquire, and not unlike the cross-examination of a legal witness; the thorough and systematic physical examination—which tests your knowledge of normal signs and appearances; and finally the process of reasoning called into play in making a diagnosis from the data obtained—all these are mental exercises of great value, and require the exercise of your best intellectual powers. The committing of the whole to paper, in the shape of an orderly and well-written report—so seldom met with—cultivates precision of thought and diction—"writing maketh an exact man."

To make rational inferences from correct observations is in a few words the gist of the problem involved in the diagnosis of disease. At times this is an easy matter, given an accurate history and unequivocal signs of disease: at others, the indications are so scanty or obscure as to tax the ablest clinician's powers of observation and reasoning. You may have wondered how in certain cases a correct diagnosis has been reached from isolated and seemingly trivial signs. There is, however, nothing marvellous in this, it is not intuition, nor is there any mystery about it—nothing more than the facility acquired by long experience based on observation, of forging the missing links in the chain of evidence. You remember Voltaire's story of how Zadig was enabled to give an accurate description of the queen's strayed spaniel and of the runaway steed of the king, without ever having seen either of these animals, but by observing the character of their footprints, and the marks they or their trappings had left on the trees and stones of the path by which they had made their escape. In many instances this is the method by which the diagnostician arrives at his conclusions—the "method of Zadig," or in more modern phraseology, the method of Sherlock Holmes.

There is another aspect to an hospital training—its humanizing influence. It is not possible that two or more years spent in daily association with the sick and the injnred should not have some influence for good on your character, and develop in you, at least, the quality of mercy which is not strained. There are foibles to be overlooked and idiosyncrasies to be understood and respected ; there are sullen patients and garrulous ones, melancholic patients and cheerful ones, and tearful ones--most trying of all—to each and all of whom you must accommodate yourselves. Kindness, gentleness and courtesy—with firmness in the background for emergencies—are never out of place, and should be meted out in the same measure to No. 15, Ward X., as to Mr. Dividends of Capital street.

I need hardly insist on the importance of faithful attendance in the various laboratories—university and hospital—including the dissecting-room. The hope and the promise of the medicine of the future lie in the extension of laboratory teaching, not only from the educationist's point of view, but from the stand-point of the diagnostician and the therapeutist. The discovery of the diphtheria antitoxin is still fresh in our minds—a discovery, it cannot be too often repeated, entirely the product of the bacteriological laboratory. Again, in all the clinical laboratories of the great medical centres of the world, investigations are being carried on which are yearly adding to the more intimate knowledge of disease, and more or less directly to further advances in therapeutics. Notably of quite recent interest is the discovery by Widal, that in the action of human blood serum on cultures of the bacillus of typhoid fever, we possess a reliable means of establishing or denying the presence of that disease in the individual from whom the serum has been obtained,—a most valuable addition to the hitherto accepted criteria in obscure cases.

From the purely educational point of view a thorough training in laboratory work is not less to be recommended. For a clear *exposé* of this aspect of the question, and of the value of the experimental method in medical education, I must refer you to the interesting address delivered three years ago, on an occasion similar to the present one, by one of the members of this Faculty.[1] But "the head and the hoof" (to use an expression of Kipling) of the argument in favour of the educational value of laboratory work is to be found, just as in the analogous case of individual clinical work, in the fact that such work teaches how to observe and to think correctly.

I have outlined somewhat sketchily the programme of your studies as laid down in the curriculum—what may be called the fixtures of the medical course. There remains a considerable portion of time which is not officially provided for. It may be asked how, in view of the amount of intellectual pabulum you are daily required to ingest and digest, the sorely taxed brain can possibly be stimulated to further effort. This is a matter that must be left to the individual worker, and each one must be a law unto himself, remembering the adage—*il ne faut pas forcer son talent.* It is to be assumed that a portion of this time is to be devoted to independent study, and this usually takes the form of reading. If done at fixed hours and not in a desultory way, this may be productive of much good. The object of such reading should be in the first place to revise the work of the day and crystallize the knowledge acquired. This the excellent text-books in every department of your work should enable you to do without much expenditure of mental energy. The student of even average ability should find no difficulty in keeping up with the daily work in reading if he bears in mind two cardinal points—to have regular hours and to refrain from memorizing. For the advanced student, who is supposed to have already an elementary knowledge of the subjects he is studying, and possesses or has acquired facility and despatch in his work, there are at his disposal in the library of the faculty, numerous books of reference with which an instructive hour may be spent, comparing the opinions of the masters in our profession. I would dissuade you entirely from devoting much time to the perusal of current medical literature. It is safe to say—and it is a humiliating confession to make—that fully nine-tenths of the material published in the medical press of this country, and perhaps of others, is worthless from an educational point of view—not to say from any point of view,—and you have neither the time nor the mental perspective required to sift the wheat from the chaff. With the student perhaps even more than with the busy practitioner it is "*omne ignotum pro mirifico.*" Far better, if you want something a little out of the way of routine work, are the essays of Holmes and of Austin Flint, and many others equally refreshing and instructive.

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[1] The Place of Chemistry in a Medical Education, by R. F. Ruttan, M.D., *Montreal Medical Journal,* November, 1893.

Finally, to those who perchance may still have leisure—though that is barely credible—I would say, dip a little into the history of medicine. What can be more interesting than to try to appreciate the genius and sound common-sense of Hippocrates, to trace the gradual growth of modern ideas from the fantastic superstitions and grotesque practices of the Middle Ages, to realise the condition of mind of those who propounded the "vitalistic," the "Brunonian," the "inflammatory" and other equally extraordinary and exclusive theories of disease; or again, to read the lives of the great masters of the profession—Vesalius, Ambroise Paré, Harvey, Sydenham, Boerhaave, Laënnee, Jenner and many others equally distinguished, ancient and modern? At the risk of being called a medical Torquemada, I would suggest as the next addition to the curriculum of studies, a course of lectures on the history of medicine. I firmly believe that the extra labour entailed upon the student, would be amply compensated by the result—the cultivation of the philosophical spirit, the stimulation of a deeper interest in the fundamental discoveries in medicine, and a proper appreciation of the genius of the pioneers in our art, coupled with a due spirit of humility and modesty with respect to our own efforts.

We are only too apt to take for granted as elementary truths, discoveries that in years gone by were the battle ground of the fiercest controversies, and to think that the present period of medical science is the only one that can lay claim to the gratitude of suffering humanity. In the introduction to his "Grundriss der Geschichte der Medicin," Baas emphasises as follows the value of the study of the history of medicine: "An acquaintance with the history "of his science is, however, especially indispensable to the practical "physician, if he would thoroughly comprehend and penetrate the "secrets of his profession. To him, indeed, it is the bright and polar "star, since undoubtedly it alone can teach him the principles of a "medical practice independent of the currents, the faith and the "superstition of the present. Moreover, it offers him as scientific gain, "thorough knowledge of the past, the measure for a just and well-"founded criticism of the doings of his own time, places in his hand "the thread by which he unites past conditions and efforts with those "of the present, and sets before him the mirror in which he may "observe and compare the past and the present, in order to draw "therefrom well-grounded conclusions for the future. An acquain-

“ tance with the views and knowledge of epochs already submerged in
“ the shoreless ocean of time, frees the mind from the fetters and
“ currents of the day, with its often repressive restraint, widens the
“ horizon for a glance into the past, and an insight into the present
“ of human activity, deepens the view for a comprehension of the
“ ideas which guided the earlier and the more recent physicians, and
“ gives, on the other hand, to our daily professional labour a higher
“ consecration, by inserting it as a most useful and necessary link in
“ the chain of development of past and future humanity. The significance
“ of the work of the individual, and his true value and true
“ position with regard to all humanity, are first revealed to us clearly
“ in and through history.” (Translation by H. E. Handerson.)

The tasks that are to be performed require, as I have said, the exercise of the best intellectual powers. What are the factors which may make you good students? I cannot do better than to quote somewhat *in extenso* from a masterly address, delivered some time ago to the medical students of the University of Minnesota, by one who is well-known to most of you—at least by name:[1]

“ In the first place acquire early the *Art of Detachment*, by which
“ I mean the faculty of isolating yourselves from the pursuits and
“ pleasures incident to youth. By nature man is the incarnation of
“ idleness, which quality alone, amid the ruined remnants of Edenic
“ characters, remains in all its primitive intensity. Occasionally we
“ do find an individual who takes to toil as others to pleasure, but the
“ majority of us have to wrestle hard with the original Adam, and
“ find it no easy matter to scorn delights and live laborious days. Of
“ special importance is this gift to those of you who reside for the
“ first time in a large city, the many attractions of which offer a
“ serious obstacle to its acquisition. The discipline necessary to secure
“ this art brings in its train habits of self-control and forms a valuable
“ introduction to the sterner duties of life . . . Ask of any
“ active business man or a leader in a profession the secret which
“ enables him to accomplish much work, and he will reply in one word,
“ *system*; or as I shall term it the *Virtue of Method*, the harness without
“ which only the horses of genius travel. There are two aspects
“ of this subject; the first relates to the orderly arrangement of your
“ work, which is to some extent enforced by the roster of demonstrations
“ and lectures, but this you would do well to supplement in
“ private by a schedule in which each hour finds its allotted duty.
“ Thus faithfully followed day by day system may become at last
“ engrained in the most shiftless nature, and at the end of a semester

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[1] Teacher and Student. By Wm. Osler, M.D., &c., &c.

"a youth of moderate ability may find himself far in advance of the "student who works spasmodically and trusts to *cramming*. . . "And thirdly add to the Virtue of Method, the *Quality of Thoroughness*, an element of such importance that I had thought of making "it the only subject of my remarks. Unfortunately, in the present "arrangement of the curriculum, few of you as students can hope to "obtain more than a measure of it, but all can learn its value now, "and ultimately with patience become living examples of its benefit. "Let me tell you briefly what it means. A knowledge of the fundamental sciences upon which our art is based—chemistry, anatomy, "and physiology—not a smattering, but a full and deep acquaintance, "not with all the facts, that is impossible, but with the great principles "based upon them. You should, as students, become familiar with "the methods by which advances in knowledge are made, and in the "laboratory see clearly the paths the great masters have trodden, "though you yourselves cannot walk therein. With a good preliminary training and a due apportioning of time you can reach in these "three essential studies a degree of accuracy which is the true preparation for your life duties. It means such a knowledge of diseases and "of the emergencies of life and of the means for their alleviation, that "you are safe and trustworthy guides for your fellow-men. . . . "The Art of Detachment, the Virtue of Method, and the Quality of "Thoroughness may make you students, in the true sense of the word, "successful practitioners, or even great investigators; but your characters may still lack that which can alone give permanence to "powers—the *Grace of Humility*. . . . In these days of aggressive self-assertion, when the stress of competition is so keen, and the "desire to make the most of oneself so widespread, it may seem a "little old-fashioned to preach the necessity of this virtue, but I insist "for its own sake, and for the sake of what it brings, that a due "humility should take the place of honour on the list. For its own "sake, since with it comes not only a reverence for truth, but also a "proper estimation of the difficulties encountered in our search for it. "More perhaps than any other professional man, the doctor has a "curious—shall I say morbid?—sensitiveness to (what he regards) "personal error. In a way this is right; but it is often accompanied "by a *cocksureness* of opinion (to use a Johnsonian word) which, if "encouraged, leads to so lively a conceit that the mere suggestion of "mistake under any circumstances is regarded as a reflection on his "honour, a reflection equally resented whether of lay or of professional "origin. Start out with the conviction that absolute truth is hard to "reach in matters relating to our fellow-creatures, healthy or diseased, "that slips in observation are inevitable even with the best trained "faculties, that errors in judgment must occur in the practice of an "Art which is largely the balancing of probabilities;—start, I say, "with this attitude of mind, and mistakes will be acknowledged and "regretted; but instead of a slow process of self-deception, with ever-"increasing inability to recognize truth, you will draw from your "errors the very lessons which may enable you to avoid their repeti-"tion. . . . The truth that lowliness is young ambition's ladder "is hard to grasp, and when accepted, harder to maintain. It is so "difficult to be still amidst bustle, to be quiet amidst noise; yet, "es "bildet ein Talent sich in der Stille" alone, in the calm life necessary "to continuous work for a high purpose. The spirit abroad at present "in this country, is not favourable to this Teutonic view, which galls "the quick apprehension and dampens the enthusiam of the young "American. All the same it is true, and irksome at first though the "discipline may be, there will come a time when the very fetters in "which you chafed shall be a strong defence and your chains a robe "of glory."

But you will be inclined to say, "We have had enough of the Gospel of Work, it is time we had a little of the Gospel of Play," and this brings me naturally to discuss the more material side of your existence as students of medicine. At the risk of being very prosaic, let me give you a few words of advice as to the manner of life that is most conducive to the welfare of a student. If you wish to do good work you must have appropriate environment, you must live with a certain degree of comfort and take a reasonable amount of physical exercise. In the much-to-be-regretted absence of a University residence, in which the conditions of existence would be arranged on a proper hygenic basis, you must necessarily fall back on the boarding-house. There are model boarding-houses—and there are others. This city may fairly lay claim to having a "Latin Quarter" of its own, but while this is not far behind its Parisian analogue in sordidness, it lacks all of the picturesqueness and attractiveness of the latter. It is poor economy, for the sake of a small saving, to confine oneself in a small not over-clean and dingy room in a dark and dismal street, when relative comfort at least is to be obtained by a trifling extra expenditure.

Murger's "Bohemia" is a most interesting study of one phase of student-life, but his students did no work to speak of, and their sole object seems to have been to amuse themselves in their own peculiar way, and as regards the material needs of life to confine themselves to what he aptly calls "the strictly superfluous." The main desiderata in a student's working room are cleanliness, sufficient cubic space and plenty of fresh air. I would not insist on such apparently obvious matters, did I not know from personal experience with students—and by no means medical students alone—that such considerations of health are constantly neglected. Many a brain-racking headache owes its origin to no other cause, and " faces" which are presumably " sicklied o'er with the pale cast of thought," may find their pallor changed to the rosy hue of health by a simple change of residence. It must not be forgotten, too, that living in crowded quarters and a vitiated atmosphere exposes—or rather predisposes—the individual to the approach of one or the other of the various infections, and especially to the modern " great plague"—tuberculosis, As regards exercise, the motto *Suum cuique* is the only one that is applicable. Suffice it to say that in some form it is essential to the maintenance of perfect health, and there are so many ways in which it may be taken that there is only the embarrassment of choice. I need only repeat here the warning against excessive athleticism, which not only defeats its own object, but often works irreparable mischief in its victim.

I cannot conclude without drawing your attention to a subject which has always interested me very much, and which many, I am sure, will agree with me in considering of prime importance—I refer to the relation of general culture to a medical education.

Bacon said somewhere that " the physician should begin with philosophy, the philosopher end with medicine ;" and there is much truth in this statement, if we take the term philosophy in the largest sense—the spirit of philosophical enquiry and the philosophical method of thought. Judged by this criterion and weighed in this scale, I fear that the majority of us would be found sadly wanting. And yet this spirit and this method form the very ground work of that other method, the experimental method, which is the one on which the science of medicine is, or should be, based, and which is indispensable to further progress in that science. All experiment is futile, unless it be productive of conclusions, and conclusions are apt to be erroneous unless they are drawn by a mind trained in the methods of induction. Current and standard medical literature are full of examples of erroneous conclusions, drawn from apparently correctly observed facts and carefully performed experiments. Such a training implies a more or less extended period of study prior to the inception of purely professional work, and the only means at present known of obtaining this training are supplied by the higher institutions of learning, those that afford the opportunity of acquiring what is generally known as a liberal education. Unfortunately but few of those who enter the field of medical study in this country come provided with the required intellectual baggage. Such is the hurry, or necessity, in the Western Hemisphere of starting on the actual bread-winning path of life, that few will, or think they can, devote the time necessary to the acquirement of a purely intellectual training. In Europe the conditions are vastly different, for a University education is considered as the necessary, and, in most countries, as the obligatory preliminary to a professional training. Take France as an illustration; in that country no individual may aspire to the degree of doctor of medicine, unless he have previously obtained the baccalaureate degree in arts or in science, and in the other states the requirements are on a similar basis. Contrast this with the condition of affairs in America, where the Johns Hopkins University is the only one requiring from the candidate for a medical education a degree of Bachelor of Arts or Bachelor of Science.

Apart from the advantage accruing to the individual from a general mental training acquired before initiation to technical studies, there is also a manifest advantage to the school itself. Many of the subjects of study which are, owing to present necessities, included in the curriculum of the medical school, are at the same time taught in the academic department—notably elementary botany, chemistry, physics, and even physiology. Were the medical student enabled to show a previous acquaintance with the rudiments at least of these branches of study, the time now employed in elementary work might be employed profitably in obtaining a knowledge of the deeper problems, and especially those having a direct bearing on human life.

The University, of which this Faculty is one of the component parts, has at all times recognized the force of the arguments advanced in favour of preliminary training as an introduction to professional studies, and has at last been able to perfect a plan which meets at least some of the requirements of the case. According to this plan a student may proceed in the course of six years to the double degree of Bachelor of Arts and Doctor of Medicine, obtaining at the same time a general intellectual culture and the special professional training. This is manifestly a step in the right direction, and while it is in reality only a compromise with the ideal, it is one for which all—teachers and students alike—should be devoutly thankful.

It is the earnest wish of the members of this faculty, and of their collaborators in the other faculties of the university, that year by year an ever greater number of the candidates for the study of medicine may learn to appreciate the value of a liberal education, and to utilize to the fullest extent the great advantages—the price of much labour and thought—that are now offered to them

But in any case, waiving the purely professional conception of general culture, is not a liberal education a thing to be aspired to for its own sake, for the satisfaction of the inner man—that consciousness of our own acquirements and powers which follows us through life, whether we will it or no? The leisure hours of an active professional career will be made more enjoyable from a capacity to return to intellectual pursuits, the taste for which has been carefully fostered during an earlier period of life, and should we seek companionship and intercourse with our fellow-men, we shall not experience that feeling of isolation which comes from exclusive engrossment in one's own particular sphere of mental activity, however meritorious it may be.

Original Communications.

ANEURYSM OF THE ASCENDING PORTION OF THE AORTIC ARCH, LEADING TO EXTERNAL RUPTURE.

With a Note on Tracheal Tugging.

BY

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AND

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The subject of these notes will be remembered by some as having been one of the cases exhibited by one of us (J. S.) at the recent meeting of the Canada Medical Association in this City.

The history of the patient is very full, he having been in the hospital for long periods during the last two years, and very full notes of his case have been taken by Drs. Reilly, McCarthy and Nicholls. The most important points in connection with the history are as follows:

The patient, 49 years old at the time of his death, was born in Nova Scotia and gave rather a full history of circulatory disease in his family. Thus his father, who is said to have had heart disease, died at the age of 58, from the effects of overstraining himself. His father's mother had heart disease, but lived to a good old age: her father again died suddenly from heart failure. The patient entered the navy at 16, and served there until he was 25 years old. During this period he lived a life of considerable excess. He drank freely, contracted syphilis at 22, and gonorrhœa at 27. He left the navy and entered government service, and for the last twenty-four years has continued in that employment, leading a clerical and literary life.

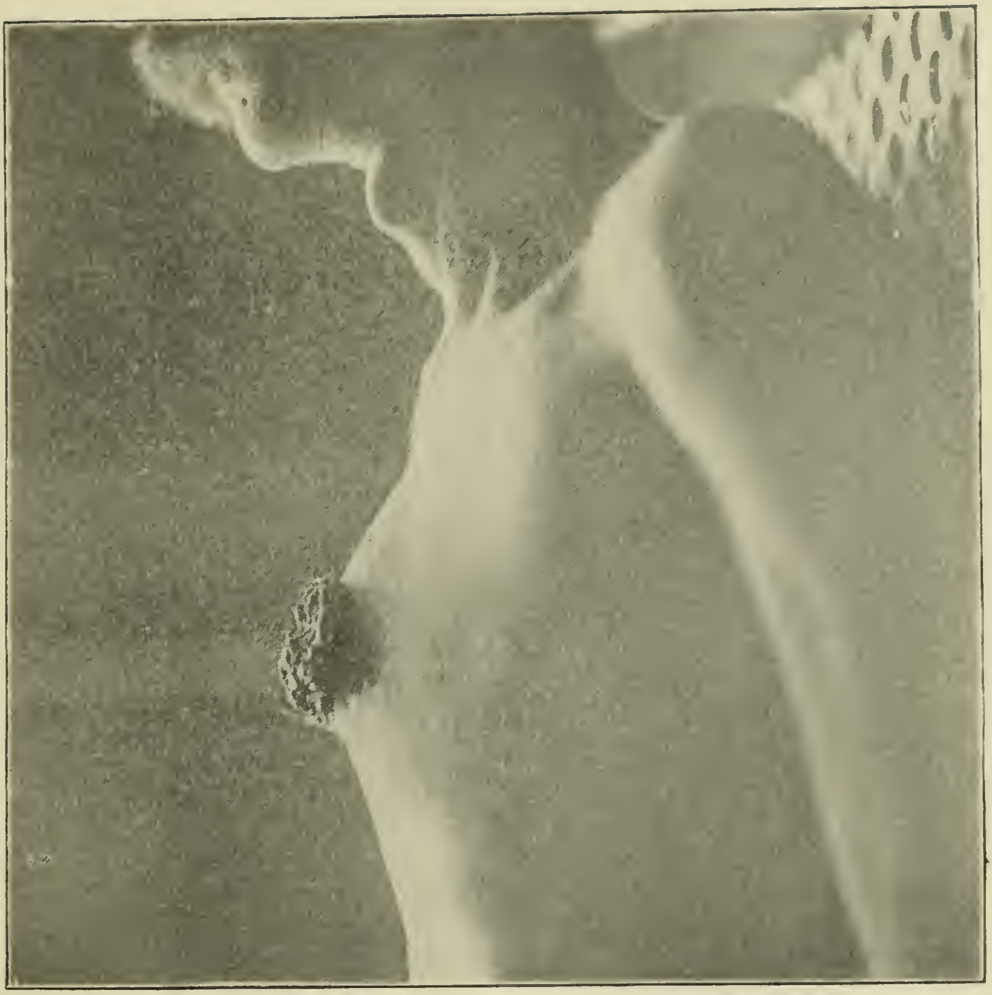
In July, 1893, after excessive mental work he began to suffer from stabbing pains in the right and left breasts. These varied in situation, severity and course. At night they changed according to the side he lay upon, appearing in the right breast when he lay upon the right side. There were also frequent pains running from the heart to the shoulders and spreading down the arms, more especially down the right arm. There were other pains from the centre of the back under the right axilla and over the right shoulder. It will be noted that these pains were mainly on the right side and so differed from similar pains which may accompany coronary disease.

The August and September of this year, 1893, were spent at the seaside and here the pains disappeared, but they returned upon his return to work. The patient, it may be added, was of a nervous, excitable temperament, easily depressed and at times most melancholic. Alcoholic stimulants were now ordered with the result that he became an inebriate, and in December, 1893, his condition was such that he underwent the "Gold Cure." This apparently had the desired effect, but the general condition of the patient became steadily worse, so that by June, 1894, he had to give up work. The following month, he entered one of the large Boston hospitals, where, misled apparently by the neurotic temperament of the patient, a diagnosis was made of nervous prostration. From the hospital he went the following month to Nova Scotia, and here, with rest, his condition improved, and in September he was able to return to work. Already according to the patient, a slight prominence was noticeable over the sternum; this gradually enlarged. It should be added that it was already in the spring of this year that the patient had suffered from wheezing respiration and paroxysmal coughs. In November, 1894, his condition was so bad that he entered the Royal Victoria Hospital, Montreal. Upon admission, there was a prominence over the chest from the second to the seventh rib, highest over the centre of the sternum. On the left side there were two small tumours, just at the edge of the sternum between the second and third, and the third and fourth ribs; the area was distinctly red with definite pulsation and heaving expansile impulse. The dullness present extended rather more to the right side, namely, half inch to the left and two inches to the right of the sternum. There was a systolic murmur over the tumour, tracheal tugging was present and the patient experienced some slight difficulty in swallowing.

The arteries were atheromatous and tension was higher on the right side. There were diminished breath sounds over the right lung with wheezing during deep inspiration. Upon December 1st, 1894, the small pulsating tumours on the left side had united. Upon Dec. 6th, definite erosion through the sternum and through the third rib on the left side were made out. Upon the 19th, straining at stool led to definite increase of the pulsation and redness of the tumour. The pains during this month were evanescent. Towards the end of the month, the skin had assumed a bronze tinge over the whole tumour with two reddened areas, one over the centre of the sternum, the other and smaller to the left of the same. In January the tumour continued to grow slowly, but by March, 1895, it was noticed to be slowly lessening in diameter, measuring 4 instead of 6 inches across. The patient continued in the hospital until May, when he was discharged, showing distinct improvement in his condition since January. The diagnosis then made was Aneurysm of the Ascending Arch.

In March of this year he was in the hospital again, for a few days, for examination, and then went home, returning on the 13th August. Upon re-admission he complained of transient pains, as before, in the pectorals and shooting down the right arm, then again in the back below the shoulder blades. Arcus senilis was now well marked. There was no dyspnœa save on exertion and save that when lying upon his back the patient experienced a smothering sensation. The right radial was rather stronger than the left. The transverse diameter of the tumour had increased from 4 to 5½ inches. The skin over it was shining and glazed, there was a harsh blowing systolic murmur heard over the chest in front, faint at the apex. There was, as before, tracheal tugging, and the breath sounds on the right side were feeble. There was no difference between the pulses, at the beginning of September. The tumour steadily enlarged and upon the 8th, the skin over the apex began to give way, there being one or two small cracks from which blood oozed in small quantities. On the next day the skin over the apex looked as though the aneurysm might burst at any moment. The patient now was discharged at his desire. He was seen at home by Dr. Reilly every other day. He lived nearly four weeks after his discharge, until October 5th. Then taking his tea in bed, sitting up, the tumour suddenly burst, the blood pouring out of the upper portion of the prominence, and in a moment he was dead.

The condition of the subject when he came down out of the post-mortem room is admirably shown by the accompanying photograph. The body was that of a somewhat emaciated adult of spare frame; the conical bulge occupied the centre of the chest, having a transverse diameter of 14.3 cm. or about six inches. The skin over the cone was rather discoloured, having a brownish tinge. The truncated apex of the cone had its centre in the line joining the two nipples, and it formed a circular, fungating, blood-stained mass 5 cm. in diameter, projecting 3 cm. above the level of the surrounding skin. A probe could be passed easily into this mass towards what, taking the head as north, might be described as N.W. by W. portion of the periphery, and later examination showed that the fungating mass was devoid of skin, and was in fact, a thick layer of blood-stained fibrin, which, until the fatal moment, had acted as a shield, preventing rupture.



ANEURYSM OF THE AORTIC ARCH.

A small cicatrix was seen at the junction of the glans and skin.

The chest was opened carefully, so that the whole of the aneurysm and attached tissues might be taken out *en masse*. The ascending portion of the aorta presented large flattened fibroid, almost cartilageneous plaques beginning immediately above the sinuses of Valsalva. 2.5 cm. above the valves began the sacculated aneurysm, proceeding abruptly by a sharp but smoothly rounded edge out of the aorta. The mouth of the sac was 6.5 cm. across in longitudinal diameter, by 4.5 in transverse. The fibroid thickening of the aortic intima was especially thick anteriorly along what formed the lower lip of the aneurysm.

This aneurysm was given off from the front of the ascending aorta, very slightly to the right; it was noticeable that the upper edge of the opening was 2.5 cm., or about an inch below the orifice of the innominate artery. Just beyond the upper edge of the mouth, the aorta measured 9.5 cm. in circumference, that is to say, that almost immediately beyond the sac the aorta was but little larger than normal. The sac was of great size from before, backwards; when emptied after removal, it measured 8 cm. in depth. At the sternal attachment it was 11 cm. from above downwards, beginning 3 cm. below the upper border of the sternum; in breadth it was 9 cm. The outer walls of the sac were formed of the pleuræ on either side and above, save in the middle line where there was solid mediastinal tissue; below the greatly expanded parietal pericardium formed the outer wall. The sac was filled with fairly loose clot in the main not laminated. Even in the outer portion where this formed the thickest layer, it had a comparatively recent appearance, and was so deeply stained with pigment that lamination could not be recognized. Portions of the eroded sternal edges could be felt protruding into the sac on the right side; on the left they were covered over. The main erosion or sternal orifice extended in the mid-sternal region from below the level of the third chondrocostal articulation to above the level of the 5th.

The rest of the aorta showed general slight dilatation with an atheromatous condition similar to that already described. The innominate, left carotid, and left sub-clavian arteries were not implicated in the aneurysm, nor again did they show any aneurysmal dilatation, either at their orgins or along their course; their walls were however, distinctly thickened. The heart showed, first, an extensive hydropericardium, the cavity containing a perfectly clear limpid serum. There was no valve disease. The main feature of the organ was the hypertrophy and dilatation of the right ventricle and with this a definite dilatation of the pulmonary artery, the circumference of which immediately above the valve was 9.3 cm.

The reason for this condition appeared clear when the lungs were examined; these were found retracted, and while the upper lobes were slightly emphysematous, the lower lobes were in a state of partial collapse with congestion. The small size of the lung and the obstruction of the pulmonary circulation were evidently due to the large mass of the aneurysm filling up so large a portion of the thoracic cavity. It should be added that both upper lobes presented adhesion to the wall of the aneurysmal sac and no where else. Further, it is to be noticed that there was no adhesion between the sac and either the trachea or the bronchi ; nor upon examination did any of the main air tubes show distortion from pressure.

The points of more especial importance in connection with this case are :

1. The position.—In general, aneurysms of the ascending arch are situated and expand mainly to the right. In this case, although the aneurysmal sac began an inch and more above the valves, the rupture had occurred in the anterior wall, slightly it is true to the right, but very slightly, and the expansion had been in the median area of the chest so that the erosion of the sternum was central. Indeed there was an accessory but well marked erosion on the left side in the region of the third left chondrocostal articulation.

2. The second point to be noticed is that in this case there had been from time to time a marked difference in the two radial pulses, which with the other symptoms might well have led to a diagnosis of aneurysm originating much higher up the arch. It must be kept in mind that difference in the two radials is by no means diagnostic. In this case the regions of the innominate and the left subclavian were well outside the region of the aneurysm, and the difference in the two pulses here, must, as in other cases in which no aneurysm is found to exist, be ascribed in the main to the arterio-sclerotic changes, affecting the two trunks to a different extent. There is, however, another possibility in this case, namely, that the aneurysm, adherent as it was to the chest wall, did undoubtedly bring about malposition of the aorta, and this malposition may have so affected or distorted the orifice of either the innominate or the left sub-clavian as to impede the passage of blood and of the blood-wave down one or other vessel.

3. The third point of some value is brought out in connection with the sign of tracheal tugging. It is generally taught now a-days, that tracheal tugging affords a sure indication of aneurysm of the trans-

verse portion of the aorta, and as I showed recently to the Society, in a case of aneurysm of this nature, dilation of the transverse arch does undoubtedly lead easily to the production of this sign and accomplishes this by pressing upon the lower end of the trachea and the the left bronchus as this passes underneath the arch. In the case before us there was no aneurysm of the transverse arch, and further there was no adhesion of the aneurysm of the ascending portion to either trachea or bronchus, and yet there was at least two years history of distinct tracheal tugging obtainable. The motion of the larynx and trachea must have, it seems to me, been brought about by the downward pressure of the large aneurysmal sac upon the lungs and smaller bronchi with each distension of the sac following upon the heart-beat. This case teaches us, therefore, 'to recognize that tracheal tugging may be a sign of aneurysm of the ascending aorta as well as one of aneurysm of the transverse arch.

4. As to the termination of this case.—External rupture is one of the more uncommon terminations of a thoracic aneurysm. According to Crisp's Tables this occurred six times in 136 cases of aneurysm of the ascending arch which he found recorded.

LIMITATIONS
OF THE
VISUAL FIELD OF INTRACRANIAL ORIGIN.[1]

BY

J. W. Stirling, M.B., &c.,
Surgeon Oculist and Aurist to the Montreal Dispensary and to the Foundling Hospital.

In reading this paper to you this evening, I do not offer you anything very new or original, but simply will give a *précis* of some interesting cases and the presumed or defined lesion in the brain which caused the limitation of their visual field.

I will take the liberty before going into the subject matter proper, of drawing your attention briefly to the present status of our knowledge as to the anatomy, both gross and minute, of the visual tracts and their central connections in the brain.

The fields of vision are, as you know, divided into an inner and outer, or nasal and temporal portions—the dividing line being fairly sharply defined and passing vertically through the fixation point. The nerve fibres from the retina are united in the optic nerve as far as the chiasma, where the fibres from the nasal portion of the retina decussate with the corresponding fibres from the opposite eye.

Before following them farther, it is as well to draw attention to the fact that, as a general rule, the field for a short distance on each side of the line dividing the nasal and temporal portions of it, is innervated with both sets of fibres, so that in a case of hemianopsia, the blind area limit would be clear of the fixation point.

From the chiasma the fibres from the corresponding halves of the retina pass through the optic tract to the basal ophthalmic ganglia, viz., the pulvinar of the optic thalamus, the external geniculate body and the anterior corpus quadrigeminum.

From the anterior corpus quadrigeminum fibres run to the nuclei of the ocular muscles—others decussate with fibres from the opposite corpus quadrigeminum in the roof of the aqueduct of Sylvius and thence pass to the fillet which runs on in the tegmentum of the cerebral peduncle to the optic thalamus.

The fillet contains the sensory fibres from the opposite half of the body.

From the arm of the anterior corpus quadrigeminum fibres go to the corona radiata and so on to the occipital cortex in the region of the cuneus where the centres for vision lie.

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[1] Read before the Montreal Medico-Chirurgical Society, October 30, 1896.

From the pulvinar and external geniculate bodies, fibres enter Gratiolets optic radiations (or corona radiata) in the posterior third of the internal capsule between the lenticular nucleus and optic thalamus and thus run on to the occipital cortex.

The external geniculate bodies receive mainly the fibres from the macula of each eye, according to Knies.

In the chiasma in addition to the optic nerve fibres are two bundles of fibres lying posteriorly and superiorly called respectively Guddens and Meynerts Commissures.

Gudden's commissure connects both posterior corpora quadrigemina and internal geniculate bodies and sends fibres directly into the corona radiata of the occipital lobe on the same side.

This commissure seems to have no connection with vision, but rather to act as an auditory chiasm.

Each convolution of the cerebrum is connected with adjacent convolutions by association fibres, as is also each lobe of the same hemisphere—and also homonymous parts of each hemisphere by commissural fibres. Hence the different portious of the brain are intimately connected.

Again the centrifugal and centripetal connection of the cortex with the rest of the brain is by the corona radiata in which the fibres are collected in the internal capsule.

Of the association fibres, one of the most important bundles is that connecting the visual cortex with Broca's frontal convolution, on account of the latter's relation to speech.

A point that Knies brings out is the presence of centripetal and centrifugal fibres in the optic nerve, the former being much finer than the latter and originating in the ganglion layer of the retina., to terminate in a fine plexus in the optic basal ganglia. The centrifugal originate in the ganglion cells of the three basal optic nuclei, are coarser and come to an end in the internal granular layer of the retina.

As to the connection of the optic tracts with the pupillary nucleus, it is a question whether the fibres from the tracts pass through the anterior corpora quadrigemina or external geniculate body and pulvinar or whether they pass from the tract close to these bodies directly to the ganglion habenulæ.

A word as to the location of the cortical visual centres. The macula portion of the field corresponds to the cuneus and first occipital convolution. Of the rest, of the occipital cortex, the anterior portion corresponds to the lower portion of the field of vision, the posterior to the upper portion, and the lateral to the outer portion.

The first case I will mention is, J. W. McK., aged 29. I saw him in October, 1895. Nine months previously, he was troubled with severe headaches and vomiting. Three months later he had an attack of Jacksonian epilepsy for the first time, which after this frequently recurred.

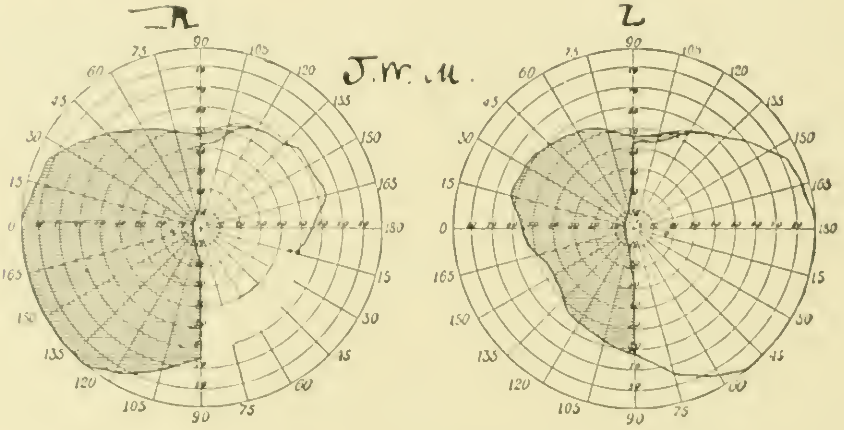
In these attacks the left arm was drawn up over the head, the left leg was drawn up flexed, the head was drawn back and to the left and the eyes rolled up and to the left.

Vision had been failing latterly. His condition on October 7th, when I first saw him was as follows:—

Complete left hemiplegia.

Vision L. E., $\frac{5}{36}$.

" R. E., $\frac{5}{9}$.



Both pupils active to light and accommodation, also consensually, also on stimulating the blind retinal area.

There was left hemianopsia, the dividing line clearing the fixation point. The right sides of both fields were slightly contracted, but the colour vision field, although contracted, was normal as to perception of colours.

In both fundi one saw œdematous choked discs, the surrounding retina being only slightly swollen, and there being no hæmorrhages. The visible disease was most advanced in the left papilla. Mentition and speech were slow. The patient died six weeks later, a post-mortem was performed by the local medical man in the country, and the report was not very explicit, being merely that he found a tumour in the motor area of the right cortex and neighbourhood.

The case presents a most interesting clinical picture.

The irritative symptoms of the Jacksonian epilepsy clearly would point to the seat of the lesion as being in the right motor area, yet this could not be absolutely affirmed, since the distant symptoms of a cerebral tumour are so varied.

The later development, however, of the marked paralytic symptoms on the opposite half the body pretty well removed any possible doubt. The further appearance of left hemianopsia with retained pupillary reflex would point to a lesion posterior to the basal optic nuclei, either in Gratiolet's radiations or the cerebral occipital cortex.

I may here mention that this pupillary reaction from stimulation of the blind area of the retina in these cases I never feel absolutely sure of, if the reflex is present—as the test is delicate—more certainty can be felt if it is absent; the latter pointing to a lesion at or in front of the basal optic nuclei.

The growth must also thus implicate the visual cortex on the right side directly either in the cortical centre or the radiations, likely the former.

It would hardly be in the radiations without causing other paralyses of ordinary sensation—hemianæsthesia.

The contracted fields on the right side must be ascribed to the choked disc condition, with the accompanying interference of conduction in the nerve—although the diminution in vision is far from being constantly present in choked disc.

The appearance of the discs was rather that of œdematous infiltration than an inflammatory process.

Knies explains this condition as due to increased intracranial pressure.

He says that normally there is an outflow from the eye towards the brain within both the nerve and its sheaths. Increased intracranial pressure would abolish this; stasis and œdema would develop.

This œdema becomes evident in the optic nerve outside the cranial cavity, where it is not enclosed in a tightly fitting sheath, i.e., at the disc, and also within the vaginal spaces where the external sheath is thinnest and yielding; immediately behind the eye.

Persistence and increase of this pressure on the nerve can in time obstruct vision. Now as to the movements of the eyes up and to the left, this symptom occurring early, during the Jacksonian epilepsy, could be due to the irritation of the visual spheres, taking into account the later appearance of the left hemianopsia. Although one need not look so far afield as this, for it is well-known that conjugate deviation towards the opposite side can be called forth on irritation of almost all parts of the cerebral cortex.

Yet it is most surely done by stimulating the visual cerebral cortex.

Munk showed that irritation of the anterior zone caused the eyes to be directed downwards and of the posterior zone to be directed upwards as well as to the opposite side

Thus the clinical picture pointed very clearly to what we might expect to find at the post-mortem examination.

The next case I will describe to you also came to section so that the diagnosis could be verified; it has already been reported by Dr. James Stewart.

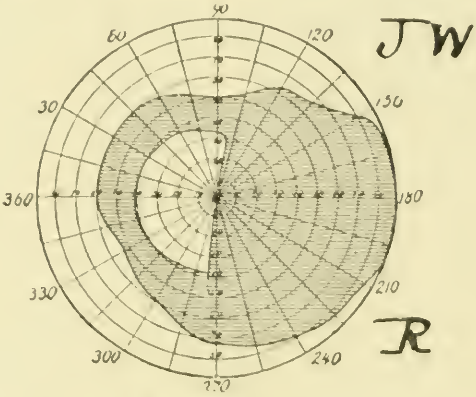
It is very interesting in this connection in that the lesion was situated in an entirely different portion of the visual tract from the last.

J. W., aged 42, came to me in February, 1888, with total blindness of the left eye and complete right hemianopsia of the right eye. The left eye had been failing since two years, and the right for eighteen months, but the latter had remained apparently stationary since eight months.

He had pains in joints and hands; there is some giddiness with a tendency to fall forward: no history of syphilis.

Has been a rather heavy drinker. Vision L. E., no perception of light, pupil semidilated immobile, but reacts on stimulating the R. E. with light.

R. E., complete blindness to outer side of field, the inner side was amblyopic; vision being reduced to counting fingers at 12 ft. In reading type can pick out a letter of the largest size (No. 16) here and there. In this area the perception of green was very defective, also after looking at green for some time there was an after image in pink.



Examination of the fundus revealed, in the L. E. white atrophy of the disc, with vessels somewhat contracted.

R. E. disc not so pale as in left eye.

His reflexes were slightly exaggerated, but there were no motor disturbances.

Frequent flushings and perspiration of face and back of neck occurred.

The further course of this case was very slow, six years elapsing before his death.

His sight entirely failed about eighteen months after I saw him. He became fat and flabby, always had a good appetite, but was greatly bothered with continuous sleepiness.

Frequent flashings of light (Photopsiæ) appeared, and later on he developed hallucinations of "beasties" crawling over him, which he imagined he could point out. The post-mortem examination revealed a tumour as large as a hen's egg, springing from the meninges and pressing on the front of the chiasma.

The microscopic investigation showed the growth to be of the nature of an endothelioma.

The diagnosis made at the first time Dr. Stewart and I saw him was that of cerebral tumour, implicating the chiasma from the front.

The visual disturbance was the only factor to base the diagnosis on, and if one could only have seen the patient earlier the limitation of the field would have been more typical.

The absence of the pupillary reflex showed that the lesion must be somewhere between the left eye and the basal optic nuclei, also the presence of visible optic atrophy was, if necessary, a proof against the lesion being further back than the basal nuclei, as in lesions of the optic radiations or cortex, white] essential atrophy is exceedingly rarely, if ever visible at the optic disc.

Again and mainly, it would be hardly possible to have a lesion causing bitemporal hemianopsia anywhere else than in the anterior part of the chiasma, unless we could imagine a lesion of each central nasal area. The portions of the optic nerve supplying the inner halves of the retina decussate in the anterior part of the chiasma, a further extension of the growth to the left would easily obliterate the function of the remaining portion of the left optic nerve causing complete blindness of that eye and subsequent atrophy.

When I first saw the patient the obtunding of the nasal half of the right field, together with the defective perception of green, pointed to marked interference with the conduction of the remaining active portion of this nerve; there was a concentric and fairly equal contraction of the field for white and colours pointing to a likely slow growth; if on the other hand the field for colours had been much more markedly contracted for colours than for white, the prognosis would be a rapid progress of the disease.

Another striking point was the absence of any optic neuritis or choked disc.

It is likely the very slow growth of the tumour would account for the absence of the choked disc, time being sufficient to allow of the formation of lateral drainage or gradual distension of the sheath.

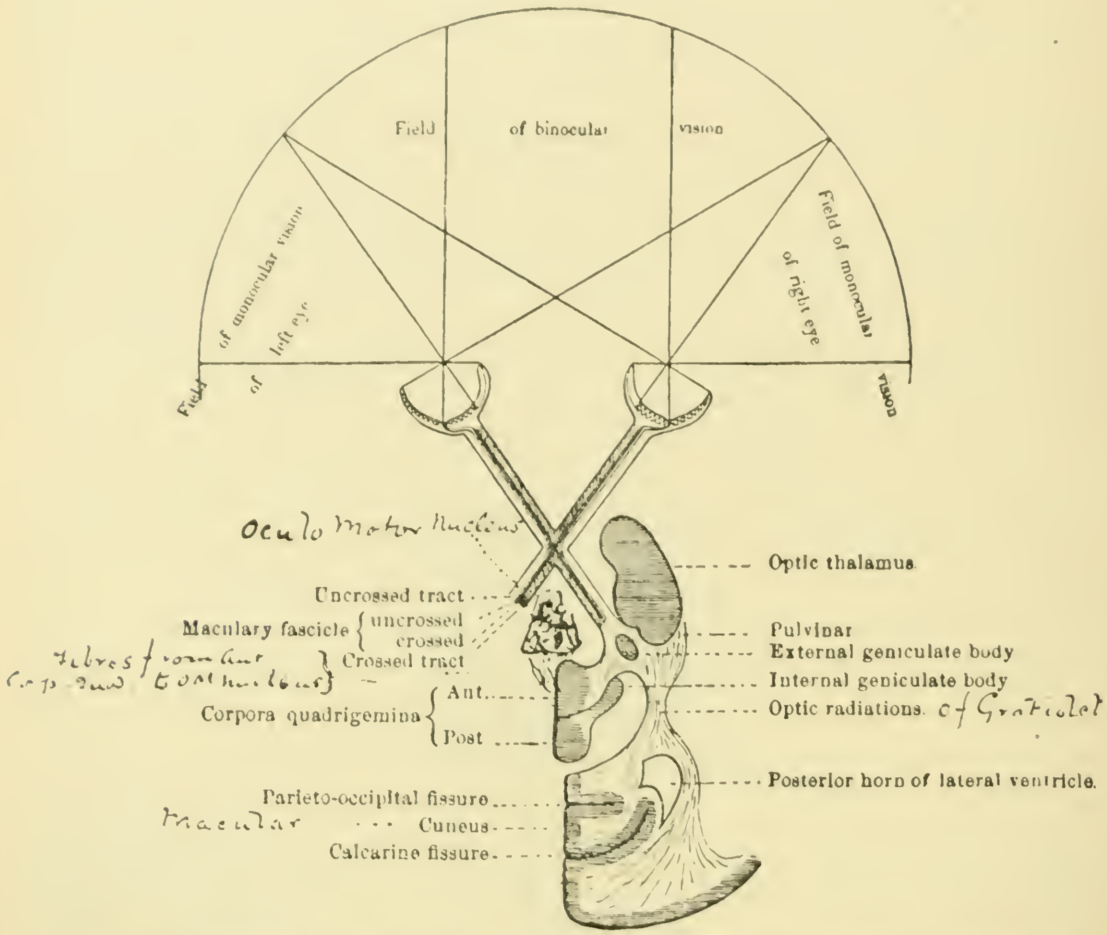
The hallucinations point to the cortex being still functional (it being the seat of conscious vision) and to its irritation.

Another interesting case in which the visual disturbance was due, not directly to the intracranial lesion, but to the optic neuritis set up by it, is the following:

G. J., aged 12, was referred to me by Dr. Springle for examination of the ocular condition.

He had for some weeks been suffering from severe headaches, occasional vomiting and giddiness.

FIG 5


Field of binocular vision
Field of monocular vision of left eye
Field of monocular vision of right eye
Oculo Motor Nucleus
Uncrossed tract
Macular fascicle { uncrossed crossed
fibres from ant Corp quad to oc. nucleus
Crossed tract
Corpora quadrigemina { Ant. Post
Parieto-occipital fissure
macular
Cuneus
Calcarine fissure
Optic thalamus
Pulvinar
External geniculate body
Internal geniculate body
Optic radiations. of Gratiolet
Posterior horn of lateral ventricle.

His vision was $\frac{5}{18}$ with each eye, but no lens could further improve it The pupils reacted to light but were sluggish, they were even.

The field was slightly contracted peripherally, and the perception of green uncertain.

The fundus showed marked inflammatory choked disc, with great swelling (3 mm.) extending well into the surrounding retina and numerous small hæmorrhages. The condition was if anything more marked in the right.

The boy complained of the headaches being general, and continuous, with occasional exacerbations. He was markedly giddy, with a tendency to fall forward, a very unsteady reeling gait, knee reflexes exaggerated, but no other motor or sensory disturbance.

This case got rapidly worse, complete blindness ensued within four weeks, convulsions, general in character, set in which became almost continuous, and finally coma and death.

I am able to show you the brain. At the post-mortem examination we found almost the entire vermiform process of the cerebellum occupied by a tumour which had undergone softening at its centre; it was strictly limited to the vermiform process and the immediately adjoining cerebellum.

The main localizing symptom here was the vertigo. The cerebellar coordination and integration of the body movements being interfered with ; the direct cerebellar tracts which convey to the cerebellum, sensory impressions indicating the posture of the body, being partly destroyed. The inflammatory nature of the choked disc differed entirely from the œdematous form I mentioned as recurring in my first case of cerebral tumour.

According to Leber and others, tumours especially of the cerebellum and base, if rapidly growing, excrete irritating and inflammatory substances. These are diffused through the cerebro spinal fluid and enter the sheath of the optic nerve, where from increased intracranial pressure stasis has already existed and here where œdema has developed, the substances set up inflammatory action.

The narrowing of the field, together with the faulty perception of green is typical of interference with conduction in the nerve.

The diagnostic value of the double optic neuritis in cerebral tumours is well known.

The next case is one of hemianopsia and hemiplegia due, I think, to embolism or thrombosis.

T. H., aged 68, a diabetic, came to me last autumn for the examination of his eyes for glasses. He was suffering from right hemiplegia and stated that some months previously he had a paralytic stroke. After this he was for a short time aphasic but this symptom gradually disappeared.

On examining his eyes I found, in addition to some opacities of the lens, well marked right homonymous hemianopsia, and this was the main cause of his complaint, on account of the difficulty in reading, the inability to see words ahead on the line being very troublesome.

The pupils were even and active, on stimulating both the blind and normal portions of the field.

Seven months later the general condition was the same.

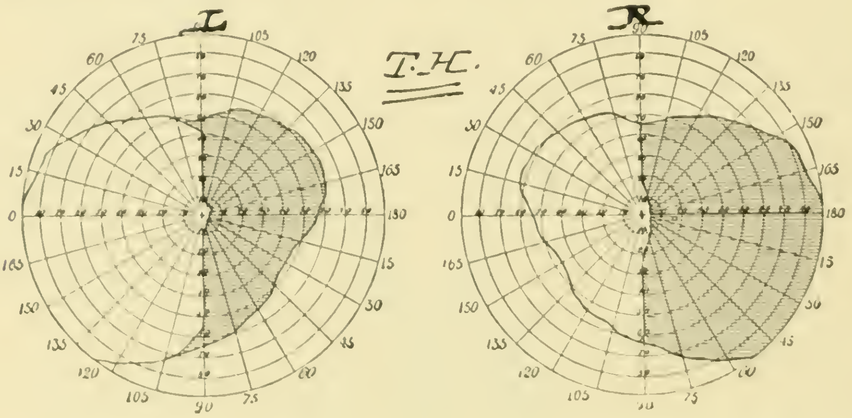
There was no hemianesthesia at any time.

There is some difficulty in locating this lesion as the areas affected are so diverse.

In the ocular symptoms the presence of the pupillary reaction point to the lesion being somewhere behind the basal optic nuclei on the left side, either in Gratiolet's optic radiations in the internal capsule or in the cortex.

It is unlikely to have been in the former as there was no anæsthesia, and the fibres of general sensation run in the same portion of the internal capsule—while still further in front are the motor fibres. Now these latter and the special sense optic fibres could hardly be affected in this region, while the fibres of ordinary sensation escaped. Hence the lesion must be cortical, and could hardly be otherwise than thrombotic or embolic in the middle cerebral artery.

The aphasia was a transitory, remote symptom.



According to Seguin, a lesion causing typical hemiplegia, aphasia if the right side is paralysed, little or no anæsthesia, and lateral hemianopsia is probably due to disease in the area supplied by the middle cerebral artery.

An exceedingly interesting and rather peculiar case of colour blindness in homonymus halves of the field of vision came under my observation some years since.

J. K., aged 35, suffering from incipient general paralysis of the insane was referred to me by Dr. James Stewart.

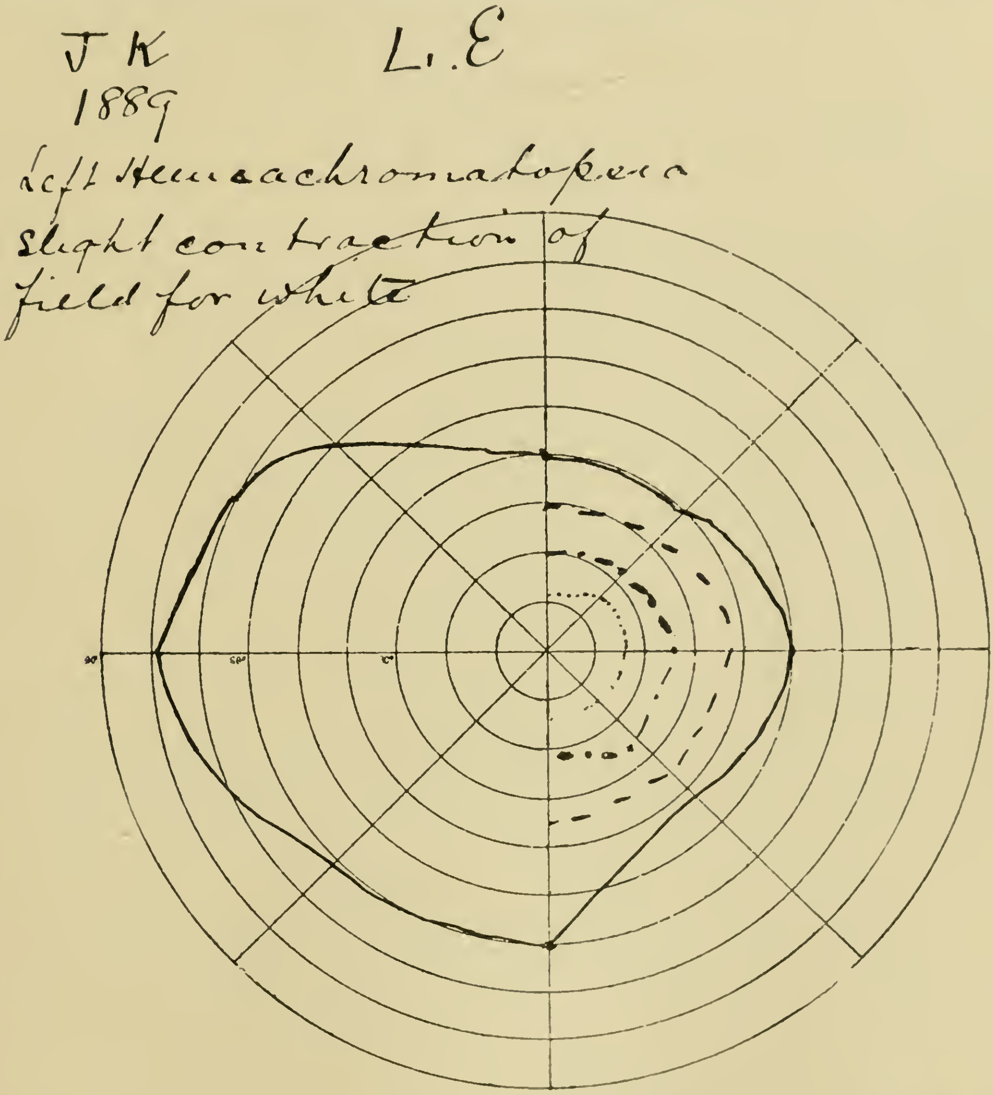
The vision was $\frac{6}{6}$, or approximately normal, the pupils even and active and the fields free for white but total colour blindness existed to the left side of both fields of vision.

He had left facial paresis. Beyond this and the mental condition there was nothing to note.

With the reaction of the pupils present, the condition was plainly referable to the right occipital cortex.

An interesting point was the retention of such good central vision.

Wilbrand brought forward the theory some years since that the elements for the perception of light, space and colour in the cortex were superimposed above one another in the above order from within outward, hence the colour sense could be interfered with, without the light or space sense being affected, and again the light elements could not be interfered with, without the space and colour elements also suffering. Accordingly hemiachromatopsia would be due to superficial disturbances of the cortex. This I mentioned some years ago in a paper I read in Ottawa.



J K 1889

L. E

Left Hemiachromatopsia

slight contraction of field for white

As Knies, however, points out, anatomical proof of this is wanting, and he brings forward a far more sensible assumption, that the function in the cortex is merely disturbed or rendered difficult, interference with conduction in the neuropilemma or the ganglion cells exhibit diminished function and capacity for action, which may be temporary or remain stationary.

Likely here we get a manifestation in this area of the general pathological state whatever it may be, which is associated with the general paralysis.

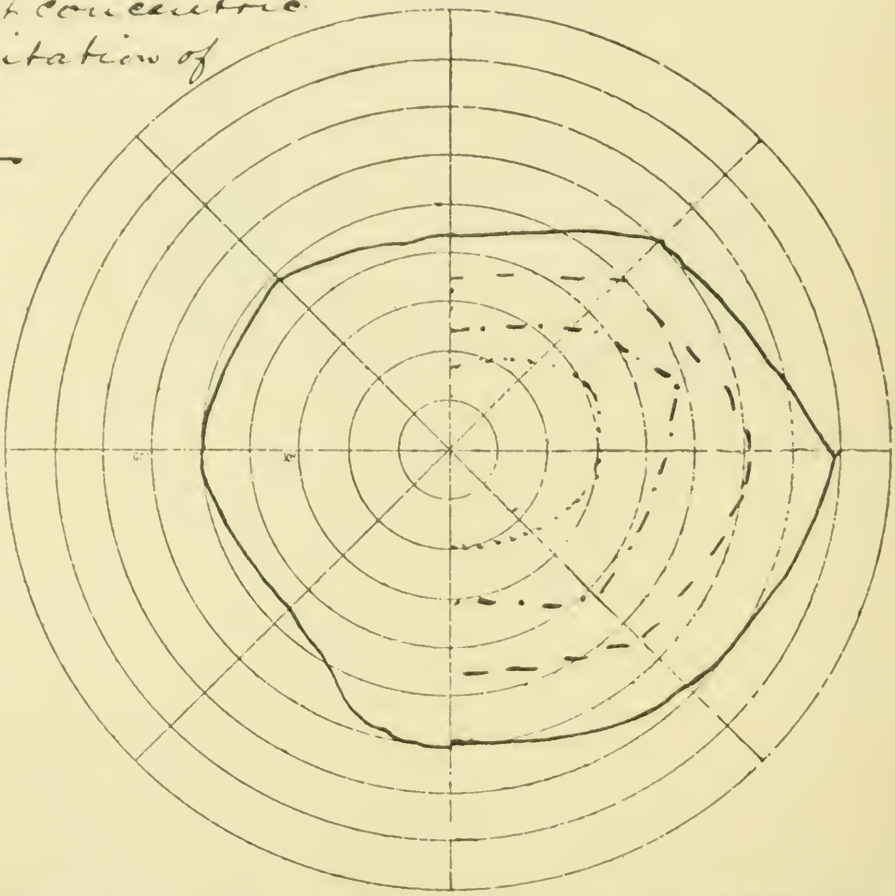
I have now brought before you a series of cases of visual disturbance due to brain lesions, each of them fairly characteristic, and happily in three cases, the post mortem reports were secured to complete them.

The first of left hemiplegia and hemianopsia, with a tumour in the right motor area and neighbourhood, producing œdematous choked disc.

J K
1889

R. E.

Left
Hemiachromatopsia
Slight concentric
limitation of
field



The second of tumour of very slow growth in the chiasma area with typical field limitations and setting up pure atropy of the optic nerves.

The third case was the cerebellar tumour, setting up optic neuritis and consequent blindness.

The fourth was a case of hemianopsia and hemiplegia, due likely to thrombosis or embolism.

The fifth was the interesting case of hemiachromatopsia.

NOTE ON EXCISION OF THE KNEE JOINT.[1]

BY

SIR JAMES GRANT M.D.

The knee-joint, the most complicated anatomically in the human system, has been subjected to excision, chiefly for three conditions.

1st. Chronic disease of the articulation.

2nd. Anchylosis, whether fibrous or bony.

3rd. Compound fracture or dislocation.

The first excision of the "knee-joint" successfully, was performed by Filkin of Norwich, in 1762, and again by Park, in 1781, 40 years ago, it has been performed in all less than 25 times, owing chiefly to its receiving but little favour. This operation has been very considerably revived by Textor of Germany, and the late Sir Wm. Ferguson, of London. The first excision of this joint in the United States, 1856, was performed by Dr. Kinloch of Charleston; and in March, 1865, in the Protestant Hospital, by myself, this being one of the first knee excisions in Canada.[2] The term excision has quite a different signification now, from what it had thirty years ago. Then it meant somewhat free removal of much of the structures essential to the functions of the articulation. At present it means, in many cases, very partial interference with the structures essential to the joint, while it aims in every case, at the complete removal of the diseased tissues. To dig out sequestra from the surfaces of bones, and scrape the latter, and thus not shorten the limb, is the order of the day. Quite a change from former times, when the ends of the bones would be sawn off, in order to coapt parts and form a mechanical joint without much consideration as to future usefulness. Such, however, was more the result of a want of knowledge of our present advanced pathology than otherwise. The term "arthrectomy" was for a time spoken of as meaning partial excision of the joint, where the diseased synovial membrane is chiefly or solely removed and "excision" to removal of the ends of the bones completely. These terms arthrectomy and excision so overlap each other, and fail to define the exact meaning, that the terms partial and complete excision are now generally adopted, and chiefly owing to the fact that it is exceedingly rare to meet with a case of knee-joint disease in which the whole of the synovial membrane requires extirpation and yet none of the bone, and vice versa, it is just as rare to meet with a case requiring the free removal of the ends of the bones, and not calling for the removal of the synovial structures. To-day complete excision of the knee-joint is a novelty, that is, opening the joint, sawing off the ends, and coapting the parts as in the days of Professor Geo. Fenwick, of McGill, whose name is handed down as one of the most celebrated surgeons Canada has produced. Why these changes or modifications as to treatment of such cases? First, the more accurate recognition of the vast importance of early and vigorous treatment of tuberculous disease, has arrested much, which formerly progressed to complete destruction of the ends of both the tibia and femur; and on the other hand, when operation is decided upon, it is at a stage when disease of the bones can be removed without complete excision of the ends, although the bone tissue is conserved as much as possible, the removal of the synovial tissue is now particularly free. In fact, Treves states it is not an uncommon procedure to dissect out the entire synovial membrane, whether visibly affected or not. In general terms, in a case of tuberculous joint, the first principle is to remove all tissues in which we believe the bacilli are deposited and to spare all structures, except the synovial membrane, not charged with the tubercle bacillus. It must be admitted that this is after all, a complex problem, not only in theory, but also in practice. In adults exsection is truly the shortest and safest way of eliminating the tedious morbid process and substituting anchylosis for a comparatively useless joint. To adult cases, orthopædic treatment is rarely applicable, while in children, mechanical and general treatment frequently are attended with the most practical results. In the child, the growth of the thigh and tibia, depends so much on the epiphyses adjoining the knee, that exsection is liable to be followed by very considerable shortening, and consequently is to be avoided as much as possible. The antiseptic treatment in such operations, as defined by Gerster, requires no comment. To be truly progressive is to be truly antiseptic in treatment, the results of which certainly mark the present as a progressive era in surgery. In the older operations on the knee-joint, in which an absolutely stiff knee was the object in view, it was not looked upon as important, whether the ligamentum patellæ was divided or not, in such a case the action of the extensor muscles not being considered. More recent operations, however, tend to the preservation intact of the ligamentum patellæ, in order to preserve, as far as possible, some of the movements. Treves recommends that if the patellar ligament has been divided, it should be stitched together again with silk, which remains buried He considers it better not to include the capsule of the joint in the stitches which unite the skin wound, as the skin is liable to be dragged in and the edges displaced, thus interfering with primary union. It is also important that the edges of the capsule and the fibrous expansion of the muscle should not be united, as any effusion into the joint cavity after the operation would thus not be pent up, but escape into the areolar tissue around and become more rapidly absorbed, and should even any pus be formed, it would be more easily evacuated. Sayre, in his recent work on "Joint Diseases," states as his opinion that exsection of the knee-joint is attended with considerable danger, and in many instances you may justly hesitate before resorting to the operation. Mr. Bryant, in a lecture at Guy's Hospital, published in the *Lancet*, "On the least sacrifice of parts as a principle in operative surgery," states: "I trust that this series of " cases is enough to demonstrate with sufficient clearness, the value of " the practice I am now inculcating, and to show that in a large " number of cases of disease of the joints, a cure may be secured by a " simple incision into the affected joint and the removal of the necrosed " bone. The series includes examples of disease of the shoulder and " elbow, hip, knee and ankle and great toe joints, and I do not think " I should be far wrong if I were to express my belief that in many " cases, if not in all, many surgeons, more particularly those who are " advocates for excision, would have excised the joints, and some few, " would have amputated. In the treatment I am now advocating, the " surgical proceedings are simple and are attended with a minimum " of danger. The success of the practice I have recorded was great." The opinion of Mr. Bryant is one founded on large practical experience and is certainly worthy of the fullest consideration, when such trying cases present for surgical interference and treatment.

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[1] Read before the Ottawa Medical Society, Feb., 1896.

[2] Reported in Medical Times and Gazette, London, Eng., March 18, 1865.

RETROSPECT

OF

CURRENT LITERATURE.

Medicine.

The Operative Treatment of Focal Epilepsy.

SACHS AND GERSTER. "The surgical treatment of focal epilepsy,"—*Am. J. Med. Science*, October, 1896.

BERGMANN. *Berl. Klin. Woch.*, April 22, 1895.

EULENBERG. *Ber. Klin, Woch.*, April 15, 1895.

JOLLY. *Charit Annalen*, XX.

The operative treatment of epilepsy is now very properly restricted to cases in which there is evidence of local disease. In idiopathic epilepsy operations, such as trephining, have deservedly fallen into disuse. Even in cases of focal epilepsy, with the exception of favourable cases of abscess or tumours, the results have hitherto not been very encouraging. Doubtless a more careful selection of cases may give better results in the future. It must be remembered that only a minority of cases of Jacksonian epilepsy hold out a reasonable prospect of cure or improvement.

Sachs and Gerster's paper deals with 15 cases of focal epilepsy due to cerebral disease or injury treated by operation. Of these three were cured, five improved, three died and four were not benefited. The indications for operation are clear in cases of local convulsions developing after injuries. A painful scar is not infrequently present over the site of injury, or local tenderness and headache as in Sachs and Gerster's first case and may give an important clue to the site and traumatic origin of the affection.

The lesions producing focal epilepsy after trauma are various. The most obvious are depressed fractures; local thickening and adhesion of the dura and cysts also occur. In such cases an exploratory operation may be undertaken and the conditions dealt with as they are found.

Another class of cases, however, are of importance in which, with local convulsions, no macroscopic change is present in the dura or cortex. Horsley, McEwan and others have defined the affected area by cortical stimulation with the Faradic current and excised the epileptogenic area. In a few instances the excised portion has been shown to present signs of chronic meningo-encephalitis, due to a spicule of bone or to hæmorrhage at the time of injury. There is thus a reasonable anatomical basis for this procedure. Unfortunately, however, there is a tendency to wide-spread inflammatory changes, especially in chronic cases, an event which greatly lessens the chances of improvement after excision in old standing cases. Another drawback is the development of a scar in place of the excised area which, in the course of a year or two, may induce convulsive attacks. It has been urged that paralysis may result from excision of the motor cortex, but as is well known the paralysis is only temporary. Sachs and Gerster record a remarkable instance in which both arm centres were removed and yet the resulting paresis disappeared in a few days.

Among the commonest causes of focal epilepsy are old attacks of cerebral paralysis in children. The lesion here is frequently a cyst, often of large size and communicating with the ventricle. In such cases most physicians are adverse to operation. An attempt to drain a large cyst is only too apt to prove fatal, as in one of Sachs and Gerster's cases, and in two cases witnessed by the writer. Should such a condition be found it is best left alone. Sachs and Gerster are, however, more hopeful of success in these distressing cases than most previous writers, One of their cases (8) with hemiplegia, athetosis and weekly fits, was relieved of the fits for four years, but as he had then relapsed and was feeble minded, it is questionable whether much benefit was conferred by the operation.

Jolly's three cases do not seem to have derived much benefit from operation. They are, however, of interest in illustrating the deleterious effects of alcohol in focal epilepsy—a point which hitherto seems to have escaped any general recognition.

In drawing conclusions of the benefits derived in any special case of focal epilepsy treated by operation, an interval of at least one, or better, two or three years should elapse. The slow development of scar tissue which takes place within this time explains relapse after temporary improvement. On the other hand, cases may ultimately improve and can be completely cured in which convulsions do not immediately cease.

A very important point brought out by Sachs and Gerster is the necessity of early operation after the development of local convulsions. If allowed to continue, it is obvious that wide-spread local inflammation may prevent any benefit from being derived from operation. It is noteworthy that the three cases in which these authors report a cure the period intervening between the onset of the convulsive seizures and operation was not more than six months, and in four of five cases of improvement the interval varied from six months to two and a half years. On the other hand the cases in which no improvement took place had lasted from five to nineteen years.

Certain German authors refer the improvement occurring in many cases of focal epilepsy treated by operation to the psychical effect.

Jolly, for instance, records a case in which a youth had local convulsions with a tender scar on the scalp which had followed an injury six years previously. Cutting down on and freeing the scar from its surroundings was followed by complete relief, only one fit occurring subsequently. *F. G. Finley.*

Ophthalmology.

Toxæmia of Exophthalmic Goitre.

LEMKE. "Toxemia of exophthalmic goitre."—*Münchener Med. Woch.*, XV., April 14th, 1896.

MARTINS "Nature of exophthalmic goitre."—*Berliner Klinik*, May, 1896.

M. ALLEN STARR. "Nature and treatment of exophthalmic goitre, with special reference to the thyroid theory of the disease and to the treatment by thyroidectomy.—*Medical News*, April 18th, 1896.

CLAUDE WILSON. "Saline baths in Graves' disease."—*Practitioner*, September, 1895.

If proof were needed of how much we are in the dark as regards this disease, the publication of many articles, diverse in their views, ought to suffice. Pathological theories are frequently advanced only to be confuted, and we would seem as yet to be no nearer the absolute truth that at the outstart. However, there are now appearing some slight clues which may, in the not distant future, lead us to the facts of the case as regards, at any rate, its pathological cause. A cursory glance at and *résumé* of the above articles will be of use in giving us at least an idea of the knowledge of exophthalmic goitre as at present held by the medical world.

Lemke absolutely asserts that exophthalmic goitre can not be a nerve disease, nor that the toxin of the struma is a nerve poison. He holds that the most constant symptom is in the muscular system, especially the heart and cross striped muscles. The poison of the struma acts specifically on the muscle, stimulating it to abnormal action, making it slow, difficult and unsafe. This causes tachycardia and muscular tremour, and from this also arises dilatation of the heart and atrophy in the striped muscle, more especially of the eye. On account of the lengthening and weakening of the ocular muscles, and through the force of the blood current, the eye is forced forwards, exophthalmus resulting. Græfe's lid symptom is then due to slow action of the orbicularis palpebrarum The inactivity of the pupils is due to the same condition in the sphincter and dilator of the pupils. The head symptoms arise from the affection of the muscle coats of the intracranial vessels, they, as a result, becoming overfilled with blood, but are not, as other authors have held, in an active hypæremic state. The same vascular condition would account for the lung symptoms, the kidney, skin and other symptoms. He has cured a number of cases by partial extirpation of the gland.

Martins starts off by saying that the conflicting theories of the disease are due more to the cardinal symptoms being regarded as the disease proper, whereas it is really a disease of every system and organ in the body to a varying degree. There is no pathological support as to the seat of the lesion being in the medulla and likewise the sympathetic theory, which fails to explain the tremour and the disordered impulses which do not pass down the sympathetic from the cortex to the muscles. The peripheral nerves are not originators, but conductors of impulses. Experimental evidence based upon section or stimulation of their fibres is of no value as an indication of the condition of the nerve cells, which is the main factor in disease. Occasionally disease of the sympathetic may be set up by one of the sequelæ of exophthalmic goitre ; but the chain and ganglia are invariably found to be healthy. Martins then says that the symptoms depend essentially on functional disturbances of the central nervous system. Goffroy, Greenfield and others have shown that the enlargement of the thyroid is due not only to vascular dilatation, resulting from disordered innervation, but also to hyperplasia in the crypts. This disease differs from organic nervous disease on the one hand and from functional (such as hysteria, &c.,) on the other. It resembles in its symptoms chronic intoxications, such as alcholism, &c., which is further borne out by the fact that it is often induced by a psychical disturbance, such as fright. In a system already soaked with alcohol, the symptoms of acute alcoholism develop frequently from slight external cause, and thus in the same way in exophthalmic goitre, the system already in a state of chronic intoxication from the disturbed action of the thyroid gland, a slight similar external cause may suffice to set up the disease. Similar also is the onset of uræmia in granular contracting kidney. The conclusion which Martins arrives at is that exophthalmic goitre is a chronic poisoning of the whole nervous system, but the question yet to be decided is as to whether the thyroid gland produces the poison or inhibits its destruction.

Dr. Allen Starr's is a most clear and elaborate dissertation on this subject and well worth the studying. His theory is that exophthalmic goitre is due to hyperactivity of the thyroid (an old theory) ; in which theory he finds himself forced to believe, as a result of his observations on exophthalmic goitre and on myxœdema.

The results of administering thyroid extract in myxœdema, cretinism and obesity must have impressed one with the fact that the symptoms of exophthalmic goitre are due to an excess of thyroid secretion in the blood. This theory will seem more probable if the symptoms of these two diseases are contrasted, and if one observes the result of the administration of the thyroid extract in myxœdema.

Dr. Starr's contrast of the symptoms is worth repeating in detail. In exophthalmic goitre, there are, swelling of the thyroid gland, protrusion of the eye-balls and rapid heart action, burning skin and perspiration, intense nervous excitement, irregular and rapid respiration and sudden exhaustion. In myxœdema there are primary atrophy of the thyroid gland, or a destruction by a cystic growth, marked tendency to ptosis, independently of the thickening of the lid, whereas in exophthalmic goitre it is rather retracted. The pulse is slow and of high tension in myxœdema, also the skin is thickened and dry, growth of hair impaired and nails discoloured; there are sensations of cold, and mentally the patient is dull and apathetic, whereas the very opposite conditions hold in exophthalmic goitre. Again the over-administration of thyroid extract in myxœdema is evidenced by exophthalmos appearing.

Starr holds with Greenfield and others that pathologically this disease is a true hypertrophy of the glandular elements, with increase of its secretion and possibly some change in the character of the secretion. Hence the rationale of giving belladonna to check the secretion. As to treatment, it seems to be mainly empirical, as recoveries have been recorded after all manners of treatment.

Dr. Starr advises after rest-cure and medicinal treatment have failed in severe and intractable cases, that extirpation of the gland is justifiable.

Dr. Claude Wilson reports a satisfactory result of treatment in a case of exophthalmic goitre. There had been prolonged and unsuccessful drug treatment. Dr. Wilson then essayed the treatment with saline baths, the baths being prepared so as to imitate the natural waters of Nauheim. His method was:

1. Begin with weak baths (1 lb. common salt and 1½ drams of calcium chloride to 10 gallons of water), temperature slightly below that of the blood.

2. Gradually increase strength of bath up to 3 per cent. Na. Cl. and and 3 per mille Ca. Cl.,—lengthen duration and lower temperature to 85°F.

3. Add free carbonic acid to the stronger baths by using bicarbonate of soda and hydrochloric acid.

4. The patient to lie down for an hour after each bath.

5. Never give baths for more than four consecutive days. The carbonic acid is not necessary in all cases, nor is it equally well borne by all patients.

Gonorrhœal Conjunctivitis.

L. J. LAUTENBACH. "Gonorrheal conjunctivitis; its treatment."—*Proceedings of the Ophthalmological Section, American Medical Association*, May, 1896.

After the usual directions as to cleanliness and asepsis, Dr. Lautenback details his method of treatment as follows:

Wipe off the eyelids with a piece of absorbent cotton soaked in 3 per cent hydrogen peroxide. Instil twenty to thirty drops of the same solution between lids, or use it as a spray, continuing until there is little or no bubbling. Then evert the upper lid and instil into the opened up palpebral folds more peroxide and then wipe the parts with absorbent cotton dipped in the same solution. Repeat the same procedure on the lower lid, being sure to thoroughly cleanse the cul-de-sac. Replace the lids and gently rub the ball through all parts of the lids so as to thoroughly cause decomposition of the discharge. The above manipulations are now repeated with a saturated solution of boracic acid. The nurse to cleanse the eye with the boracic acid solution every hour or half hour. The physician after this applies once or twice a day a solution of nitrate of silver, 10 to 60 grs. to the ounce (the severer the inflammation the stronger the solution) with a cotton wound probe over the palpebral conjunctiva into the cul-de-sac, and then to the ocular conjunctiva, carefully avoiding the cornea. Instil 4 or 5 drops of sweet oil after it. The nurse instils a few drops of a one or two per cent. solution of nitrate of silver two or four times daily. Ice cold compresses and atropin, when indicated, complete the treatment.

The Value of Eucain in Ophthalmology.

RICHARD VOLLERT. "Über den werth des Eucain in der Augenheilkunde,"—*Münch. Med. Wochenschrift.* 1896. No. 22.

Vinci has already lauded the action of this drug as an ocular anæsthetic very highly; but as in nearly all the new drugs which are brought out with a great flourish of trumpets, later investigations always discover some drawbacks, and eucain is no exception to the rule. Its anæsthetic action is undoubted, but the first drawback is the greater irritation it causes when compared with cocain. A more serious drawback, however, is, according to Vollert, the extensive desquamation of corneal epithelium it occasions. Cocain does the same, but to a much less degree. This, Vollert considers, is sufficient to prevent eucain ever entirely displacing cocain as an anæsthetic. The great point in favour of eucain is its freedom from toxic action when absorbed into the system. It is also much cheaper than cocain. It would seem, however, likely to supplant cocain in cases where large quantities are injected subcutaneously, &c., on account of its non-toxic action. Five per cent. is the general strength of solution used. It does not undergo decomposition on boiling, is freely soluble in water, but only with difficulty in a sublimate solution.

Experimental Studies in Sympathetic Ophthalmia.

BACH. "Bericht der 24 Versammlung der Ophthalmt Geselshaft."

Bach has again attempted to prove or disprove the migration theory of Deutschmanns as to the origin of this disease, but has arrived at entirely negative results.

In his investigations Bach failed in his ophthalmological or bacteriological work to find any support for Deutschmann's theory. He also failed to find any support for the bacterial theory in eyes enucleated during or after sympathetic inflammation, although attenuated by inflammatory changes.

The resumé of his work is: A severe state of irritation in one eye can, after a certain time, give rise to microscopically observable changes in the second eye.

The irritation extends from the exciting eye centripetally along the ciliary nerves to the ciliary ganglion, from these by the sympathetic root to the carotid plexus, and from this through the arterial circle of Willis to the carotid plexus of the opposite side, and hence in turn again through the ciliary ganglion to the second eye.

J. W. Stirling.

Pathology.

Concerning the Placenta and Ectopic Gestation.

YOUNG, ALFRED H. "The development and structure of the placenta" —*Manchester Medical Chronicle*, vol. IV., p. 86, 1895.

WEBSTER, J. CLARENCE. "Ectopic pregnancy, its etiology, classification, embryology, diagnosis and treatment" with 80 illustrations Edinburg and London. Young J. Pentland, 1895.

There is no organ in the human body that has given a more barren return for the amount of patient investigation that has been devoted to it than has the placenta, none of which the pathology is so incomplete. What we know surely concerning it has been gathered together most laboriously, and the amount of chaff that has had to be sifted to gain the few grains of wheat, has been prodigious. But as in other branches of medical science so in embryological studies of the human fœtus, the last decade has seen notable advances, and Dr. Young's article and Dr. Clarence Webster's book [1] show that we have arrived at a position where at last we have a solid basis under our feet, although that basis might with advantage be broader.

Briefly the present standpoint with regard to the structure and development of the placenta is as follows:

Just as the fertilised ovum of plants reacts upon the surrounding cells and causes their destruction, so the mammalian ovum must not be regarded as impassive, or as dependent upon changes in its surroundings rather than upon its own activity for the series of events constituting the first uterine changes. So low down as the kangaroo with its imperfect placenta, the growth of the fœtal tissues is evidently dependent upon active absorption of uterine fluids, and this same would seem to obtain to a marked extent in ruminants. In man, and the higher animals this is not so clear, but evidently the placenta of the growing ovum exercises a peculiar stimulation upon the uterine wall in its immediate neighbourhood. That uterine wall need not be already in a modified condition. The escape of the ovum and its fertilisation, while frequently associated with menstruation is not necessarily connected therewith, and, as Dr. Webster points out very clearly, pregnancy may occur in a girl before the onset of menstruation, at a time when the mucosa cannot be modified by that process; it may occur late during the period of lactation when there is no menstruation, and after the mucosa has been completely renewed, or again at the menopause during a period of amenorrhœa. The view of Lawson Tait and of Berry Hart that the ovum can only graft itself on a connective tissue from which the covering epithelium has been removed would therefore seem untenable. We are led to hold that this grafting is due to an influence exerted by the active ovum upon the cells in its immediate neighbourhood. The formation of the decidua vera is the result of this influence. In short, as shown by comparative studies, before the fixation of the ovum the maternal tissues exhibit a remarkable activity, the glands in the neighbourhood enlarge and become more tortuous, the interglandular substance proliferates, the submucous capillaries dilate and form a well marked layer beneath the surface of the swollen decidua.

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[1] I am glad to see that this very full and thorough work of Dr. Webster has already arrived at the dignity of having been translated and published in Germany.

While this is taking place, the ovum has been undergoing rapid cell division, and, in place of the single cell, there is developed the early embryo, with its outer covering of epiblast. As Dr. Webster shows from his own studies of early human ova, both uterine (three and four weeks) and ectopic (four, five and eight weeks), and Minot and Kastschenko had already recognized, the surface of the decidua and of the chorion and chorionic villi of the fœtus are covered to a greater or less extent by a remarkable nucleated mass, often vacuolated, presenting no evidences of cell division. The nature of this curious layer has been shown by Hubrecht (in the hedgehog). The outer layer of the epiblast of the embryo proliferates, rapidly forming a protoplasmic coating to the embryo of several thicknesses of cells. This plasmodial mass becomes applied to the decidua, and then becomes vacuolated, so that a reticulated structure is formed connecting ovum and decidua. Dr. Webster suggests that this layer subserves the purposes of fixation and of nutrition or absorption from the decidua, a process which would seem to be in part phagocytic, leading to the destruction of the epithelium lining the uterus, though in man it may be that this action is not so extensive as in some of the lower mammals.

Next, as the embryo developes, it would seem that the newly forming villi of its chorion find their easiest path along the spaces of the reticulations of this plasmodial or "trophoblastic" layer, and so approach the maternal tissues. These same spaces eventually become filled with maternal blood—that is to say, the blood tissues of the decidua communicate with the spaces, and thus the fœtal villi float or lie bathed in maternal blood and so absorb nutriment from the maternal blood, without there being (as was held until quite recently), any layer of maternal cells covering the villi and interposed between the blood-streams of the mother and the fœtus. The method whereby the maternal blood comes to bathe the villi would seem to be clearly demonstrated by the photographs of Webster's sections from early cases of ectopic gestation, and corresponds to what has been shown to occur in the hedgehog, bats and rodents by Hubrecht, Van Beneden, Duval and other observers, namely, the fœtal trophoblast advances into the decidual tissues throwing out processes of different shapes and sizes. As Webster points out, this can only be by the phagocytic action of the trophoblast and absorption of the tissue by the process. Soon the trophoblastic processes spread along the walls of the maternal blood sinuses, and even penetrate them, and, having once penetrated them, permit the blood to make its way between the trophoblastic cells, and so to surround the villi. In later stages, this fœtal lining becomes flattened out and disappears almost entirely. These stages have long been misinterpreted, and the burrowing inwards of the fœtal tissues has been mistaken for, and described as, an outward extension of the endothelium of the sinuses.

When once the maternal blood is thus established in the spaces of the reticulum we have the earliest stage of the placenta, in which the fœtal villi, composed entirely of the lower unaltered layers of the epiblast, lie bathed in the maternal blood. Very soon, it would seem, the villi gain a fuller development; the fœtal mesoblast, with its blood vessels, advances into them; and again, from now onwards, little buds or projections of epiblast are to be seen on the chorion; the mesoblast, with its vessels, advances into them; they grow in length and approach the decidua, and so are formed new villi, some of which become attached to the decidua by their swollen ends. The trophoblastic reticulum gradually disappears until but few remnants—small masses of undifferentiated cells—are to be seen; the maternal portion of the placenta grows relatively little beyond the earlier stages, so that eventually the complete placenta is developed, consisting in the main of fœtal tissues—of villi, with a vascular stalk, covered by a thin layer of epiblast, lying in spaces, through which circulates the maternal blood.

There are many points upon which I have not touched in this rapid, and I trust not too involved description of the development of the placenta; the intimate structure of the decidua, the formation of the decidua serotina, the intimate structure of the placental chorion, all have been passed over. Much may be learnt concerning these subjects by a study of Dr. Young's paper and Dr. Webster's monograph. I have wished to reduce the subject to its simplest elements and to represent the parts played by the maternal and fœtal tissues respectively, and to give a basis for sound pathological considerations.

It will be seen that the earliest stage is a reaction on the part of the maternal tissues, the later stages an active development not to say invasion of fœtal epiblast and mesoblast.

If in the early stage the ovum is capable of setting up so profound reaction in its neighbourhood why, it may be asked, is it that we do not meet with ectopic pregnancy almost as frequently as if, not more frequently than uterine? The obvious though perhaps not wholly satisfactory answer to these questions is that only in the uterus under physiological conditions do we find tissues capable of reacting to such an extent as to ensure the continued development of the ovum, or, perhaps, capable of reacting to any degree. So extensive a change as that occurring in the uterine mucosa, connective tissues and vessels at the future placental site must in the first place require tissues capable of undergoing these modifications and again must be largely of the nature of a reflex nervous act, the result of a stimulus that has more than local effects, or in other words the stimulus must act along special paths. That this is so I shall proceed to show later. The reflex to this stimulus can only occur in certain definite areas; in the properly developed organism in one area, the uterus; in the imperfectly formed organism in two, namely the uterus and the Fallopian tubes. For the more carefully the various cases of ectopic pregnancy are studied the more assured are the numerous observers that ectopic pregnancy never *originates* in the ovaries themselves, in the peritoneal cavity or elsewhere, save in one or other portion of the Fallopian tubes—either where these pass through the substance of the uterine wall (interstitial) in the tube proper (ampullar) or in connection with the free end of the tube and the fimbriæ (infundibular).

To explain why this should be so we have, with Webster, to fall back upon comparative anatomy and the development of the female sexual organs.

In forms in which two separate oviducts persist, the ova may gain attachment and placentæ may be formed at any point along their course. In higher forms, with the fusion and union of the cavities of the lower ends of the two oviducts to form a uterus, the upper free portions of the oviducts—the Fallopian tubes—became in the perfectly developed individual mere passage ways for the ova, and the reaction between embryo and oviducal wall which leads to the formation of the placenta can only take place in the uterus. In the imperfectly developed individual we must assume that portions, at least, of the mucosa of the Fallopian tubes retain their original powers of reaction towards the ovum, so that if by any chance the ovum becomes arrested on its downward journey it can in these individuals induce the development of a Fallopian decidua, and so ectopic pregnancy may be initiated. It is interesting to note that Webster has found that when ectopic pregnancy is proceeding in one tube the mucosa of the other may show decidual changes—a clear proof of what has already been stated, that the change in the maternal mucous membrane, the development of the decidua, is largely reflex, due to the stimulus exerted by the presence of the growing ovum. It may be stated as a law of reflex action that in paired organs a given strength of stimulus leads to reaction being manifested not only on the one side, but in a similar area on the other.

Once the decidua is formed and the chorionic villi grow into it, the stages of development of the ectopic placenta are in every respect comparable with those of the growth of the uterine placenta, though as might be expected the thin muscular wall of the tube and the difficulty which the shape of the organ presents to an expansion which shall keep pace with the growth of the embryo introduce modifications in the extent of placental development.

According to the fate of the growing embryo and to the region of primary attachment, we can now simplify our classification of ectopic pregnancies, and the following table, epitomised and modified somewhat from Dr. Webster's arrangement, would seem to include all the forms that have been fully studied up to the present time.

ECTOPIC GESTATIONS may be :

- Ampullar—Commonest form.
- Interstitial—In connection with the interstitial uterine end of tube.
- Infundibular—In connection with free end of tube.

I. AMPULLAR :

- (1) *Simple* : The tube not undergoing rupture. (*Tubal*).
  - i. Persistent, continuing to full term.
  - ii. Arrested, in one or other way *i, e.* by total abortion (through fimbriated end) into peritoneal cavity, by hæmotasalpinx, pyosalpinx, absorption, mummification, adipocere formation.
- (2) *Compound*[1] :
  - i. Rupturing into broad ligaments. (*Tubo-subperitoneal*).
    - *a.* Gestation continued within ligament.
    - *b.* Gestation continued after secondary rupture into peritoneal cavity. (*Tubo-subperitoneo-peritoneal*).
    - *c.* Gestation arrested by hæmatoma, suppuration, mummification, &c.

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[1] I introduce this term which seems to me useful, from analogy between these pregnancies and fractures.

- ii. Rupturing into peritoneal cavity- (*Tubo-peritoneal.*)
  - *a*. Gestation continued.
  - *b*. Gestation arrested by hæmatocele, peritonitis, mummification, &c.

II. INTERSTITIAL:
- (1) *Simple*: (Tubal).
  - i. Persistent.
  - ii. Arrested.
- (2) *Compound*:
  - i. Rupturing into uterine cavity. (*Tubo-uterine*(
  - ii. " " peritoneal cavity. (*Tubo-peritoneal*)
  - iii. " " both uterine and peritoneal cavities. (*Tubo-utero-peritoneal*).
  - iv. " " broad ligament. (*Tubo-subperitoneal*).

III. INFUNDIBULAR: rare; the classification of the ampullar varieties may possibly be applied to this form. Among the compound forms two are often recognized:
- *a*. Tubo-ovarian, *i.e.*, sac becomes adherent to ovary.[2]
- *b*. Tubo-abdominal, *i.e.*, sac becomes adherent to abdominal viscera.

Ectopic gestation is, however, but one of the numerous pathological conditions which are elucidated by and in their turn throw light upon the development of the placenta. Another important condition is referred to by Professor Young, namely, the development of tumours in connection with the placenta and placental remains.

" One cannot," says Young, " fail to observe the remarkable similarity between the early stages of placental formation and those seen in the development of malignant epithelial tumours. In both there is epithelial proliferation, followed by epithelial invasion and accompanied by irritative changes in surrounding tissues. During placental formation the maternal tissues are invaded by fœtal epithelial cells, cells, much in the same way that the sub-epithelial stratum of the skin or mucous membrane is encroached upon by proliferating epithelium in cancer formation."

The conditions indeed are very similar: we have here that same presence of rapidly proliferating embryonal cells manifesting intense vitality which, in a recent article in this JOURNAL, I pointed out was in itself sufficient to explain the progress of malignant tumours. And Young continues, "There seems no reason why any portion (of the fœtal epiblast), left behind in the separation of the placenta should not continue to grow, and invading still further the uterine mucosa assume all the characters of a definite tumour growth."

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[2] The view is here taken that primary ovarian pregnancy does not occur. This is Webster's view and it is supported by the fact that in no case up to the present time has it been clearly proved that the condition has started in the ovary, the appearances in all cases can equally well be explained by considering the placenta as primarily developed from the infundibular region. Still it must be remembered that as yet no complete proof has been advanced that primary ovarian pregnancy is impossible. H. Ludwig's most interesting case of "simultaneous uterine and ovarian pregnancies" (Wiener Klin. Wochenschr. July 2nd, 1896; epitome, B. M. J., Nov. 14th, 1896,) may well be infundibular, for the ovarian fimbria of the tube spread into the sac and the placenta was along the uterine attachment of the sac, the remains of the ovary being away from the placenta. This is the first case recovered of what by the above classification may be termed a persistent infundibular tubo-ovarian pregnancy.

That uterine tumours may develope from placental relics is now well recognized. As I have pointed out, the placenta is in the main a fœtal structure, nourished by the maternal blood, and being in the main fœtal, it is possible that such tumours can be of fœtal origin. Meyer has described an epithelimatous growth which followed the removal of a hydatiform mole, in which the resemblance of the invading columnar processes to chorionic villi was especially noticeable. Meyer, it is true, did not venture to describe the growth as entirely fœtal, but imbued with the present German view, suggested that the epithelial element was of maternal origin, and that the chorionic villi had protruded into it, a view which our present knowledge of placental structure renders eminently improbable. But Frænkel has published a case of "carcinoma developing from chorionic villi." Here also malignant disease of the corpus uteri followed removal of a vesicular mole. This growth had a papillary form, invaded the deeper tissues and gave rise to metastases. Microscopically it was shown to have originated from the remnants of chorionic villi left after the removal of the mole, since the structure of the uterine glands was still recognisable and its histological appearance was quite different from that of cancer of the endometrium of the corpus uteri."

I have been unable in a hurried search to discover other cases of this nature, but these two would seem to support the view that (not only can cells derived from one tissue invade others and form metastases, but also that) cells originating from another individual—the embryo—are capable of assuming similar powers of invasion and metastatic growth. That this process of invasion should be developed by the multiplication of parasites within those cells seems to me most unlikely when it is remembered that these same cells of the chorionic villi, under physiological conditions, manifest this same power of invasion to a considerable, if strictly limited, degree; or otherwise, these facts brought forward by Professor Young seem to be wholly in accord with the argument adopted by me in the article to which I have already referred.

A consideration of another most interesting form of tumour of placental origin—the so-called malignant deciduoma—must be left for another occasion. To discuss the various theories propounded as to its nature would unduly prolong this article. Sufficient has, I trust, been already brought forward to show that a fuller knowledge of the placental structure materially advances our views in many directions.

J. G. Adami.

Reviews and Notices of Books.

Prize Essays on Leprosy. By Newman, Ehlers, and Impey. London: The New Sydenham Society. 1895.

This volume contains three valuable essays on leprosy.

The first is an account of the decline and final extinction of leprosy as an endemic disease in the British Islands. It is by George Newman, M.D. It represents a great amount of painstaking work. Dr. Newman shows that leprosy reached its zenith in the thirteenth century and became extinct in the eighteenth century. During this period there was a large number of special hospitals or institutions founded, where lepers were confined, not however always alone. It does not appear that at any time there was strict isolation of the lepers. The final extinction of the disease is attributed not to the imperfect isolation, but to the gradual improvement in diet and method of living among the poor. The diet of the English people during the leprous period consisted chiefly of bad meat and stale fish, there being an almost entire lack of vegetables. The author is not inclined to attribute to the stale fish diet a preponderating influence in bringing about the disease as has been alleged by some writers.

The second essay, by Dr. Edward Ehlers of Copenhagen, is on the conditions under which leprosy has declined in Iceland and the extent of its former and present prevalence. Dr. Ehlers from his researches believes that leprosy was introduced into Iceland, after the crusades, from Norway. In the seventeenth century the disease was very prevalent, little being done in the way of isolation or otherwise to limit its spread. A great epidemic of smallpox in 1707, and of measles in 1846, did more than all other measures to lessen the number of lepers, as they were the first to succumb to any epidemic influence.

At the present time it is computed that there are about 200 lepers in Iceland. As we have a considerable number of Icelanders in Manitoba, it is important that a strict watch should be kept on all emigrants coming from Iceland.

Dr. S. P. Impey, Superintendent of the Robben Island Leper and Lunatic Asylum in South Africa, deals with leprosy in South Africa. It is a report on the facts as to the recent increase of leprosy at the Cape and its prevalence in South Africa.

Dr. Impey refers to an interesting point in his essay, viz., the cure of the disease in some cases. In the leper wards of the Robben Island Asylum there have been for several years about 100 cured cases, many of them of long standing. In one case the disease was contracted 50 years previously.

Dr. Impey believes that the contraction of the tissues resulting from the inflammation caused by the bacillus in the nerves is the cause of the death of the bacilli.

The most recent contribution to the action of the diphtheria antitoxin is from Prof. Paltauf of Vienna. In 1100 cases of diphtheria in various parts of Austria treated by antitoxin, 970 recoveries took place, a mortality of 12½ per cent. The report furnishes strong evidence as to the great value of the treatment in the diminished mortality, and also when it shows that the earlier the treatment is used, the more effective is its action. In the cases where the injections were used as early as the second day of the disease, the mortality was 6·7 per cent. while in cases first treated on the third day it amounted to 19 per cent. and those treated on the fourth day to 23 per cent. On and after the sixth day it was upwards of 33 per cent. When it is remembered that in previous years the mortality seldom was under 40 per cent. it is clear that we have in the antitoxin a measure exceeding all others in usefulness.

Physics for Students of Medicine. By Alfred Daniell, M.A., LL.B., D.Sc. &c., Examiner in Physics to the Royal College of Physicians of Edinburgh, &c., &c. Macmillan & Co. 1896.

In this manual, the author has brought together the main principles of physics, and while, owing to its size, it is not intended to be exhaustive, still all the important facts of the science are presented in a clear and instructive manner. Those points which may be considered to concern students of medicine more closely, are treated in greater detail than others which are of general interest only. If there is any fault to be found with this little volume, it is that the author has attempted to bring too much material within the limits of a student's manual. For the student who desires to acquire a good knowledge of the elements of physics to which he can add later by the perusal of more extensive works, this volume is to be recommended.

The Student's Medical Dictionary. By George M. Gould, A.M., M.D. Tenth edition, re-written and enlarged. Blakiston, Son & Co. 1896.

The popularity of Gould's Medical Dictionary is amply shown by the fact that it has now reached the tenth edition. The present volume has been enlarged and re-written and is designed to replace the "New Medical Dictionary" and the Student's Medical Dictionary, the plates of which have been destroyed. The features which rendered previous editions so acceptable to student and practitioner alike are still prominent in the present work. While not aiming at the encyclopædic character of the larger dictionaries, the author has succeeded in making this volume one which will supply all the information required in the great majority of instances. Tables of the various bacilli, micrococci, leucomaines, &c., will be found very serviceable. It is more complete and more up to date than any other medical dictionary of similar dimensions, and is to be cordially recommended. E. J. S.

Hydro-Electric Methods in Medicine. By W. S. Hedley, M.D. Second edition. H. K. Lewis. 1896.

Dr. Hedley in the present volume describes the hydro-electric bath. the "Faradaic" bath, the electrical bath and the electric douche. The physics of the hydro-electric bath are dealt with in the first chapter and the therapeutics of the bath and the methods of administration are fully described. The fact that certain diseases of children and certain diatheres are said to be benefited by the systematic application of hydro-electric methods will render the book valuable to those who intend following this line of treatment. E. J. S.

The Physicians' Visiting List, for 1897. Philadelphia. P. Blakiston, Son & Co.

This popular visiting list is now in the forty-sixth year of its publication and is so well known that little need be said. It contains, as usual, not only the blank leaves for the visiting list, but also other blanks for memoranda, addresses, accounts, &c., &c. Besides these, a dose table, a table of metric and apothecaries' weights and measures and much other useful information. From personal experience we can confidently recommend this list.

Literary Notes.

With the January issue of the *Edinburgh Medical Journal* a new series will be commenced. Dr. G. A. Gibson will continue as editor, assisted by a large staff of contributors in the various departments of medicine and surgery. The journal will, as formerly, be issued in octavo and each number will contain not less than ninety-six pages.

The members of the Medical Profession in Scotland, and Scottish Alumni resident elsewhere, have determined to have a Journal in which Scottish work and teaching in all departments of Medicine should be more fully represented than they have hitherto been.

The journal will be issued monthly, beginning in January next, and will consist of about 96 pages octavo. The aim of the committee and of their editor will be to lay before the readers of the journal representative work from all parts of Scotland—not only from Edinburgh, Glasgow, Aberdeen, St. Andrews and Dundee, but also from the country districts, were much valuable work is done, which, in great part, has been lost to the profession.

This journal will be appropriately named *The Scottish Medical and Surgical Journal*." It is under the direction of Professor Simpson, Edinburgh ; Professor Annandale, Edinburgh ; Professor Stephenson, Aberdeen ; Professor Hamilton, Aberdeen ; Dr. Joseph Bell, Edinburgh ; Dr. Clouston, Edinburgh ; Dr. John Wylie, Edinburgh ; Dr. Underhill, Edinburgh, and Dr. J. W. Miller, Dundee, and is edited by William Russell, M.D., F.R.C.P., Ed., and a large and efficient staff.

Society Proceedings.

MONTREAL MEDICO-CHIRURGICAL SOCIETY.

Annual Meeting.

The twenty-sixth annual meeting was held on Friday, Oct. 2nd, 1896. Dr. A. D. Blackader, President, in the chair.

The members present were :—

Drs. J. G. Adami, J. H. B. Allan, Jas. Bell, G. E. Berwick, H. S. Birkett, A. D. Blackader, E. H. Blackader, G. G. Campbell, A. N. de Martigny, D. J. Evans, F. G. Finley, J. L. Foley, N. D. Gunn, D. F. Gurd, H. D. Hamilton, W. F. Hamilton, J. M. Jack, W. H. Jamieson, Wyatt Johnston, H. A. Lafleur, F. A. Lockhart, C. F. Martin, J. A. Macphail, J. B. McConnell, S. R. Mackenzie, A. E. Orr, A. Proudfoot, T. D. Reed, G. T. Ross, F. J. Shepherd, A. L. Smith, Jas. Stewart, A. E. Vipond, G. Wilkins and C. F. Wylde.

The minutes of the last annual meeting were read and confirmed.

Dr. J. M. JACK, Treasurer, read his annual statement showing that the finances of the Society were in the following condition :

Receipts for the session 1895-96.		
Cash balance in Molsons Bank	$155 25	
Interest for the year 1895	7 27	
Rental of Society's rooms	24 00	
Sale of 6 vols. Proceedings	6 00	
Subscriptions from members	680 00	
		872 52
Expenditure for session :		
Rent of rooms for one year	$425 00	
Stationery, postage, printing and current expenses	253 01	
		678 01
Cash balance		$194 51
Assets :		
Arrearages in members' subscriptions	$190 00	
Rent due for rooms	36 00	
Society Furniture	210 00	
Cash balance	194 51	
		630 51
Liabilities :		
Rent due for two months	$ 70 84	
Due Montreal Medical Journal Co	96 00	
Other expenses	20 00	
		186 84
Nett assets		$443 67

Dr. G. GORDON CAMPBELL, Secretary, reported a gratifying increase in the attendance for the past session. The average number per meeting had risen from 40 to 47. The largest attendance at any meeting was 95, as against 63 last year, and the smallest 28, as against 18 the previous year.

During the year 22 new members were enrolled, making a total of 142 ordinary members, and besides there were at present 17 temporary members, making a grand total of 159 members.

Thirty-eight members contributed the 120 items of the programme in which there were 25 papers and 21 case reports. The following table shows the classification:

	Medicine.	Surgery.	Gynæcology.	Obstetries.	Ophthalmology.	Physiology.	Anatomy.	Orthopedics.	Legal Medicine.	Pathology.	Dermatology.	Bacteriology.	Pediatrics.	Physics.	
Living cases......	3	10	..	..	..	2	1	2	..	..	..	..	..	..	= 18
Path. specimens..	16	14	12	1	1	..	..	..	6	1	1	..	..	..	= 52
Case reports.... .	8	2	2	2	..	..	..	..	..	4	3	..	..	..	= 21
Papers	4	1	2	1	..	1	..	..	..	2	..	..	1	..	= 11
Discussions.......	2	1	..	..	..	..	..	..	..	..	..	..	1	..	= 4
Demonstrations ..	1	..	..	..	1	..	..	..	1	..	..	..	.	1	= 4
															110

Dr. F. A. L. LOCKHART, Librarian, reported that during the past year but few changes had occurred in the Library.

The Society had continued its subscriptions to *The Lancet*, *The Medical News* and *The American Journal of the Medical Sciences.*

The Society was indebted to the Editors of the MONTREAL MEDICAL JOURNAL, *Canada Medical Record*, *La Clinique*, *L'Union Médicale* for donating the respective journals for the current year.

Owing to the generosity of Dr. T. G. Roddick he was enabled to have several volumes of magazines bound. These were all periodicals which had been collecting for the last two or three years and were becoming destroyed, but which were now rendered serviceable. They are as follows: *Lancet*, 6 vols.; *Medical News*, 5 vols.; *Medical Record*, 5 vols.; *New York Medical Journal*, 4 vols.

Dr. F. W. Campbell donated one volume of Robert's System of Medicine,

The Librarian suggested that, in order to be of more practical use than it is at present, the library should contain more current magazines, at least one in each branch of medicine. An effort was made during the past year to do this, but failed. It might be urged that there were first-class medical libraries elsewhere in the city, but none were so conveniently situated for the majority of the members. A society of the standing of the Montreal Medico-Chirurgical Society should have a really good library, and this could easily be obtained by members presenting to the Society a subscription for one year to one or more medical periodicals. If this were done. it would not be long before the Society would possess a library of current medical literature of which it might be proud.

The following officers were elected for the session 1896-97 :

President—Dr. GEORGE WILKINS.
1st Vice-President—Dr. J. G. ADAMI.
2nd Vice-President—Dr. F. R. ENGLAND.
Secretary—Dr. G. GORDON CAMPBELL.
Treasurer—Dr. J. M. JACK.
Librarian—Dr. F. A. L. LOCKHART.
Council—Drs. JAMES BELL, A. D. BLACKADER and F. J. SHEPHERD.

Dr. A. D. BLACKADER, the retiring President, then read the following address :

This evening closes another year's work for our Society, and it is befitting that, before vacating the office to which you in your courtesy called me last year, I should briefly lay before you a review of the work accomplished during this period.

Our meetings, as our Secretary tells us, have been well attended during the year, the average number of members present being considerably higher than that of any previous year, and nearly double the attendance of five years ago.

The papers presented have, speaking generally, been of a high order of merit, and have been followed by interesting discussions. As an indication of the high character of these papers, and of the position which this Society is taking in the medical world, I may mention the very frequent quotations made from them which appear, not only in American and English Journals, but also in the Reviews published on the Continent of Europe. Out of the 98 papers, abstracts of which appear in the last volume of Braithwaite's retrospect, there were three papers read by members of our Society.

Not only have our meetings been well attended, but, I am happy to say, they have been most harmonious. No source of discord has, to my knowledge, occurred among the members, and I am not aware of one acriminous discussion having taken place in our rooms during the year.

During the past year many patients have been brought and exhibited at our meetings, illustrating either some rare form of disease, or the result of new and important surgical operations. Among those calling for special mention are the following:

A Case of Meningeal Hæmorrhage necessitating Ligature of the Carotid, by Dr. Shepherd.

A Case of Temporo-Sphenoidal Abscess, following Middle Ear Disease, by Dr. James Bell.

A Case of Perforated Gastric Ulcer, by Dr. Armstrong.

A Case of Removal of the whole Upper Extremity for Sarcoma, by Dr. Armstrong.

A Case of Removal of Cyst from Brain for Relief of Jacksonian Epilepsy, by Drs. Armstrong and Finley.

A Case of Angioma of the Skull, with crepitations of the skull cap over a large area, by Dr. Armstrong.

Two Cases of Acute Muscular Dystrophy, by Dr. James Stewart.

A Case of Transposition of the Viscera, by Dr. T. P. Shaw.

A Case of Volitional Tremor simulating Insular Sclerosis, by Dr. G. Gordon Campbell.

All the cases were of the highest interest, and many of them have been noticed and commented upon both in England and America.

The pathological specimens shown have been numerous, some of them presenting very rare conditions, but all of them of much interest. Among the more notable ones I would mention the following:

Distoma of the Liver, first authentic case recorded in America, Dr. Wyatt Johnston.

Mycetoma Pedis, second case shown to the Society. The first case was shown last year, and was also the first authentic case recorded in America, Dr. Adami.

Gummata of the Heart, Drs. Wyatt Johnston and Finley.

Phthisis Bulbi, Drs. Mathewson and Buller.

Primary Cancer of the Liver, Dr. Martin.

Dissecting Aneurism, Dr. Adami.

Foaming Liver, Drs. Adami and Jamieson.

Primary Epithelioma of Urinary Bladder, Dr. Jamieson.

Four discussions have taken place during the year: one on the etiology of cancer; a second on the diagnosis and treatment of diphtheria; a third on albuminuria, and a fourth on the etiology and treatment of summer diarrhœa.

The subjects in themselves were of much interest, and the most recent work in connection with them was presented in an exhaustive and able manner by the readers of the several papers. It is much to be regretted that several of these papers have not yet been placed in the printer's hands, and will, therefore, fail to appear in the Transactions of our Society.

I am sure I may express the grateful sentiments of all the members of our Society to those who, with commendable zeal, and the expenditure of very considerable trouble and time on their part, have brought these specimens for exhibition to our Society.

So interesting a feature of our regular meetings have these pathological specimens become, that it is felt that a brief half hour at the commencement of the meeting is all too short for their exhibition and discussion, especially as it is the half hour during which members often find it difficult to be present, owing to urgent visits which have sometimes to be made after office hours. This year it is proposed to devote an additional evening, one Saturday every month, entirely to pathology. We are confident that it will prove sufficiently interesting to ensure a full attendance. This will prevent the crowding together of valuable specimens, which of late has frequently interfered with the full discussion of important points. It will, also, allow more time for the paper of the evening and for other work of the Society.

Our Society has during the past year again endeavoured to make its influence felt in the councils of our city. The change proposed by the Health Committee in the administration of the Civic Hospital was felt to be most injudicious, and liable to increase seriously the difficulties already met with in securing prompt attention and isolation for cases of infectious disease. Owing in great measure to our emphatic protest, and to the action of the Montreal General Hospital, the proposed change has not been pressed, and, for the present, the matter is in abeyance. It is hoped that next year this important hospital may be maintained according to the original agreement.

Before closing, permit me to make a few suggestions on one or two matters which I consider of interest to our Society.

As to our membership. In the city this already embraces almost all the English-speaking physicians, and, therefore, we cannot expect any large increase in this direction ; but there are many physicians in neighbouring towns and in the country who would be very glad to join us, and to contribute occasionally to our discussions, with benefit both to us and to themselves. At present we exact from all such who join us the full fee of five dollars. This, in connection with the expenses attendant upon a visit to the city, loss of time, etc., acts as a deterrent to their presence among us. I should propose that we establish an associate membership which should include all physicians not resident in the city or its immediately adjoining suburbs, who should pay an annual fee of only two dollars, and perhaps lack the privilege of voting. Possibly under this class of associate members we may permit to enter those who belong to the resident staff of the city hospitals and who at present, I understand, are admitted as temporary members without any fee.

Our present rooms are already becoming too small for us, and although there are still two more years to elapse before our lease expires, it appears to me desirable, even at so early a date as this, to give the matter our attention. At present our yearly rental divided by the 18 or 20 meetings held during the winter and spring, makes the cost to the society of its room for each meeting night nearly 22 dollars, not including light and attendance. Even for so large an expenditure, our accommodation is not equal to that of some of our sister societies in the city. Could we not possibly amalgamate with them ?

Our need extends to the use of one large hall two or three times a month, and the permanent occupation of two or three smaller rooms, for library, pathological specimens, etc. There are several societies which, I think, would be glad to join with us in securing similar accommodation for themselves, and it would be a matter of small detail to arrange that there should be no clashing in the evenings during which the hall was occupied.

Such an arrangement can seldom be made at the last moment ; leases will overlap and difficulties will supervene ; but, if the matter is given sufficient thought beforehand, such might be easily overcome. I would, therefore, suggest that a committee of active and, may I add, enthusiastic members be appointed to take the whole matter under their consideration.

With regard to our reporting, nothing could work better than our present arrangement. At the same time one must express a hankering after a properly trained stenographer. As a member altogether too old to undertake such a flight, may I, with all the enthusiasm of a Gower, suggest to some of our younger members the advisability of learning stenography, and the desirability that one of our own members should eventually undertake this work ?

THE

Montreal Medical Journal.

A Monthly Record of the Progress of Medical and Surgical Science.

VOL. XXV. NOVEMBER, 1896. NO. 5.

ON THE TEACHING OF HYGIENE.

The subject of Hygiene and Preventive Medicine is one which for long has been a thorn in the side of Medical Faculties. How is it to be taught ? Its scope is enormous, being almost co-equal with that of Medicine itself; for in order to study the preservation of health, and prevention of disease, it is necessary to thoroughly consider what constitutes departure from health, and so to refer continually to what causes disease. Even as ordinarily taught there are three highly important subdivisions of the subject, namely, Preventive Medicine, environmental Hygiene as we may term it. namely, Hygiene of the surroundings of the individuals, i.e., ventilation, water supply and disposal of sewage, and thirdly, Hygiene of Food, pure food and its adulterations and departures from standard. To treat properly the first of these, the Hygienist should be a fully equipped Bacteriologist and Pathologist ; to deal authoritatively with the second, he should be a professional engineer and sanitarian ; to enter into details of the third, it is imperative that he be an organic chemist of the first order. When we knew relatively little and the subject was in its infancy, it was possible for one man to deal comfortably with all these subjects; but this is no longer possible, and the teaching of Hygiene in every University has, in consequence, suffered. In Great Britain the difficulty is often disposed of by making the professorship or lectureship in Hygiene, one of the stepping stones to professorships in other subjects, and as a consequence the teaching is poor and perfunctory. In Germany, the professors in Hygiene are now almost entirely trained bacteriologists, and but a few of the disciples of Pettenkofer have attempted, with partial success, to cover the whole ground. In America again, it would seem, judging from the department of Hygiene in the University of Pennsylvania, that, following the German system, the bacteriological aspect of the subject is being regarded as the most important.

For more than two years the Medical Faculty of McGill University has been debating as to how, under the circumstances, to make the best use of Sir Donald A. Smith's endowment of $50,000 towards the establishment of a department for Hygiene, and as Dr. Craik points out in his introductory address in this number, the solution reached is, that it is impossible to appoint one man to teach the whole subject. Dr. Craik himself is appointed head of the department, but the teaching in the three main branches is given over to those members of other departments who are presumably most competent to deal authoritively with each special branch of this subject. In this way it is hoped that the subject will be treated in a manner commensurate with its importance in the medical curriculum.

This we believe is a new experiment, and it remains to be seen what are its results. In any case it is better than that system which has been tried in so many Universities and has in general been found wanting. We congratulate Dr. Craik upon this bold solution of the problem.

BRITISH MEDICAL ASSOCIATION.

MONTREAL MEETING, AUGUST, 1897.

Since our last issue much has been accomplished in connection with the forthcoming meeting, but at the same time it is not possible for us to describe everything, because much that has been arranged awaits confirmation of the Council of the Association in London. This much however, may be said, that it has been determined to hold the meetings of the various sections in the large halls and theatres of the various buildings surrounding the campus at McGill, and of the Theological Colleges in the immediate neighbourhood, provided that consent be obtained from the authorities of these latter institutions. In this way the twelve sections will be all within three minutes walk of each other, and it may be doubted whether at any of the previous meetings in the old country the Association will have met in such a convenient suite of buildings.

The great weakness at previous meetings of the Association has been that the reception room has been too small, and as a consequence there has been undue confusion and crowding, when the members have come to get their various tickets, daily programmes, etc. To obviate this it has been determined to erect a temporary large hall in the grounds of McGill, to form a temporary main entrance through which all members will pass in and out. This hall will be about 100 by 50 feet, and will contain counters for the distribution of tickets and journals, together with post and telegraph offices, enquiry office, and adjoining it will be the Secretaries' rooms. Special care will be taken to have the correspondence of members properly assorted for easy delivery to them.

It has been determined that the general meetings and public addresses be held in the Windsor Hall, a building capable of seating close upon 3,000, which is in every way adapted for this purpose.

In all probability the museum, will be housed in the Victoria Rink. This building appears large enough for this purpose, and its situation, close to the Windsor Hall, makes it well suited for the purpose.

The Excursion Committee is busy arranging for the short and long tours in connection with the meeting. The Chairman, Dr. Geo. E. Armstrong, 1127 Dorchester street, Montreal, and the Secretary, Dr. H. S. Birkett, 123 Stanley street, Montreal, will be glad to receive the suggestions of those willing to help make the excursions successful.

In our next number we hope to be able to announce the names of the deliverers of the addresses, aud of the chairmen of the various sections appointed by the Council of the Association in London. We would again advise those members of the profession who are not members and who wish to be present at the meetings to send in their applications immediately, so that they may start their membership and receive the *British Medical Journal* on January the 1st.

We gave in our last issue full details of the steps to be taken in order to become members of the Association.

THE MONTREAL GENERAL HOSPITAL FAIR.

The final report of the Managers of the Fair held on the 5th October last and the following days was given in at a meeting held at the Natural History Hall on Tuesday, the 24th November.

The object of the fair was to supply the Montreal General Hospital with a full outfit of Surgical and Medical Instruments and appliances, the fund provided for that purpose by a Bazaar held ten years ago being now exhausted. The most unprecedented success attended the efforts of the management and of the ladies who undertook the heavy responsibility and onerous work during the week of the fair. The total receipts amounting to $12,934.57 and the net results to $11,202.50.

After careful deliberation it was resolved that of this amount the sum of $7,000 should be invested as a permanent fund, to be added to from time to time by legacies and otherwise from the friends of the hospital, the balance, $4,200 to be handed to the hospital for the immediate purchase of instruments.

In this connection it will not be amiss to add that one of our most liberal and prominent citizens, and a large benefactor of McGill University, to express his satisfaction at the way the Fair was managed, emphasized his approval by donating the sum of $1000 towards the purchase of a sterilizer ; one of the pressing requirements of the hospital.

The Montreal General Hospital will now shortly be fully equipped with an up to date supply of Surgical and Medical Instruments and appliances which will enable it to maintain its place in regard to equipment and work, thus fully justifying the confidence reposed in it by the citizens of Montreal during the seventy-five years of its existence as a corporation.

NEW YORK GRADUATES' SOCIETY OF McGILL UNIVERSITY.

The second annual meeting of the New York Graduates' Society of McGill University, Montreal, was held Tuesday evening November 10, when the following officers were elected for the year :

President—Rev. Dr. E. H. Krans, M.A., rector of St. Ann's Church, New York ; Vice-Presidents– Dr. Wolfred Nelson, F.R.G.S. : Dr. James A. Meek, William de Courcey Harnett, B.C.L. ; Secretary—Dr. W. Ferguson ; Treasurer—Dr. H. N. Vineberg ; Executive Committee —The Rev. J. J. Rowan Spong, M.A., B.C.L., LL.B. ; Dr. George C. Becket, J. A. Stevenson, B. Ap. Sc.

Non-resident Councillors—The Right Rev. J. D. Morrison, M.A., D.D., Bishop of Duluth : the Rev. Charles Bancroft, M.A., New Hampshire ; Dr. William Osler, Baltimore, Md. ; Dr. Thomas Kelly, Omaha, Neb. ; the Rev. J. C. Braco, Vassar-College, New York ; H. Holten Wood, B.A., Darby, Conn.

The following resolution was adopted : " Resolved, That the congratulations of the Society be extended to the Right Rev. Dr. J. D. Morrison, one of its members, upon his election to the Episcopate, news of which we have heard with pride and pleasure."

The graduate of the Faculties of Medicine, Law, Arts, Science and Veterinary Medicine of McGill University, now residents of the United States, says the New York *Times* in noting the meeting, number over 500, of whom 50 live in and near the city.

The Society's sole aim and object is to bring them into close touch and fellowship. The Society will found a scholarship, to be known as the Sir John William Dawson Scholarship, in memory of Sir John

William Dawson, who has devoted his life and energies to making McGill University the leading teaching body in the Dominion of Canada. His students bear him in kind and affectionate remembrance.

ON HOSPITAL REPORTS.

The activity displayed in the Pathological Departments of the two large English hospitals in Montreal, is finding further outlet in the publication of reports from either hospital. Reports of this nature are of the greatest value, not only as giving evidence of the scientific activity reigning in any medical centre, but also as bringing together the investigations which have been published from the laboratories of the hospitals. Up to the present time, the only volumes of hospital reports published in Montreal, have been those edited by Dr. Osler when he was Pathologist to the Montreal Hospital. The second of these was of a general nature and included articles by various members of the staff. We only trust that the publication of the present reports will be the commencement of a series in medicine and surgery as well as in pathology from both of the hospitals.

The Report which is now in course of preparation at the Montreal General Hospital will consist of a complete summary (comprising anatomical diagnosis in each case, with the general reference index), of all the lesions recorded in the autopsies performed during the period from January 1883, to December 1895, inclusive.

The information thus furnished will it is hoped, be not only of general scientific interest to those engaged in pathological work, but will have a special local interest also, as illustrating the relative frequency of pathological conditions occurring in Canada, and as forming a part of the medical history of the hospital.

The reference index will enable those wishing to obtain further details with regard to the cases, to find them without further trouble in the hospital report.

The work is now in the press. By arrangement of the Hospital Committee of Management, the report is to be published at cost price, which for the estimated edition will be 30 cents for unbound copies, and 50 cents for copies bound in cloth. It will form about 100 large octavo pages. Those wishing further copies will please leave their orders with Dr. Wyatt Johnston, Dr. Bazin, Mr. J. Patton at the Montreal General Hospital or with the bookseller.

The report from the Royal Victoria Hospital though containing more matter will of necessity not cover so large a period as the above. It will have as its main feature a very full analysis of the morbid conditions, recognized in connection with each of the autopsies of the first full year's work of the pathological department. The compilation of this in a form which will be of use in subsequent years, has taken many months of study and now it is almost completed. In addition there will be a reprint of the papers published from the laboratory. The expenses of this work, which like the other is already in the press, are being defrayed by the hospital authorities.

Altogether these two works should do much to extend the reputation of Montreal as a centre of medical activity.

MONTREAL GENERAL HOSPITAL TRAINING SCHOOL FOR NURSES.

The following is the alphabetical list of the successful candidates at the recent examinations of the final class of nurses:

Nurses Fair, Finch, Martin, McEwan, McLean, Munro, Shaw, Windel.

The prize for the best examination in surgical nursing was won by Nurse Shaw, the prize for bandaging by Nurse McEwan.

THE AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNÆCOLOGISTS at its ninth annual meeting held at Richmond, Va., elected the following named officers for the ensuing year, namely: President, James F. W. Ross, M.D., Toronto; Vice-Presidents, George Ben. Johnston. M.D., Richmond, and John C. Sexton, M.D., Rushville, Ind.; Secretary, William Warren Potter, M.D., Buffalo; Treasurer, Lavier O Verder, M.D. Executive Council—Charles A. L. Reed, M.D., Cincinnati; Lewis S. McMurtry, M.D., Louisville; A. Vander Veer, M.D., Albany; J. Henry Carstens, M.D., Detroit; and William S. B. Davis, M,D., Birmingham. The next annual meeting was appointed to be held at the Cataract House, Niagara Falls, N.Y., Tuesday, Wednesday, Thursday and Friday, August 17, 18, 19 and 20, 1897.

CHANGE OF NAME.—The editors of Mathews' Medical Quarterly announce that with the January issue of that publication its name will be changed to "*Mathews' Quarterly Journal of Rectal and Gastro-Intestinal Diseases.*" This is a change which has been deemed necessary for some time, as it is essential that the title of a medical journal should convey to the reader an idea of its contents, and this has not been the case with its name from the beginning.

There will be no change in the policy of the journal in the least. As it will continue to be the only English publication devoted to diseases and surgery of the rectum and gastro-intestinal tract, the articles which will appear in it will be limited to these subjects. The journal will continue to be edited by Drs. J. M. Mathews and Henry E. Tuley, and published in Louisville, Ky.

NEW BOOKS, &c., RECEIVED AND NOTED.

A Text-Book of Materia Medica. By G. F. Butler, Ph.G., M.D. W. B. Saunders.

Mortality from Suicides. Published by the Mutual Life Insurance Company of New York 1896.

Physicians' Visiting List. P. Blakiston Son & Co. Philadelphia.

Essentials of Physical Diagnosis of the Thorax. By Arthur M. Carwin, A.M. M.D. W. B. Saunders, Philadelphia.

Traitement des Affections Infectieuses du Globe Oculaire par les Injections Sous-Conjonctivales de Sublime, par Jehin-Prume, M.D., Montreal, 1896.

Suspensio Uteri with Reference to its Influence upon Pregnancy and Labor. By Charles P. Noble, M.D. Reprinted from the American Journal of Obstetrics. Vol. XXXIV., No. 2, 1896.

The Treatment of Tuberculosis and other Infectious Diseases with Oxytoxines, By J. O. Hirschfelder, M.D.

Report for the Year 1895-96, presented by the Board of Managers of the Observatory of Yale University to the President and Fellows.

What is the Best Method of Making and of Closing the Coeliotomy Incision ? By George M. Edebohls, A.M., M.D. Reprinted from the American Gynæcological and Obstetrical Journal for May, 1896.

Drainage versus Radical Operation in the Treatment of Large Pelvic Abscess. By Charles P. Noble, M.D. Reprinted from the Journal of the American Medical Association, August 8, 1896.

A New Operation for Certain Cases of Procidentia Uteri. By Charles P. Noble, M.D. Reprinted from the American Gynæcological and Obstetrical Journal for May, 1896.

The Indications for Ventral Fixation of the Uterus. By George M. Edebohls, A.M., M.D. Reprinted from The Medical News, March 14, 1896.

Electricity in the Treatment of Exophthalmic Goitre. By Robert Newman, M.D. Reprinted from the Journal of the American Medical Association, December 7, 1895.

Obituary.

THE DEATH OF SIR JOHN ERIC ERICHSEN.

Sir John Eric Erichsen, the author of the well-known work on surgery, died on the 22nd September, 1896, at the age of 78 years.

Probably no man in recent years, has for so long a period held a more prominent or influential position, among English surgeons, as a surgeon, as a clinical teacher, or been so successful as an author.

He studied medicine at University College Hospital, and became a professor in University College at the early age of thirty-two. The first edition of his surgery appeared in 1853. It was published in one volume of 950 pages. The fifth edition was published in two volumes in 1879. It was translated into German, Spanish, Italian and Chinese. During the American rebellion, the American government gave a copy of the American edition to each army surgeon, but did so without the consent of the author or his publishers. He had held the highest positions that the profession in England could confer upon him, and at the time of his death was president of University College, emeritus professor of surgery and consulting surgeon to University College Hospital, and surgeon extraordinary to the Queen.

As a man he was kind and generous.

Among his pupils were Sir Joseph Lister, Sir Henry Thompson and Marcus Beck.

A correspondent of the *Lancet* gives the following amusing anecdote of the late Sir John Erichsen.

"The late Dr. Hugh McNicol, of Dalmally, Argyllshire, told me of his having once met Erichsen. A serious fracture case occurred in a large hotel in the country and Dr. McNicol was called to it. When setting the limb an old gentleman came to him and said he would be glad to give any assistance required, as he too was a medical man. He was thanked by Dr. McNicol and asked to use extension, etc., and to all the local man's directions, the old gentleman gave ready obedience. The fracture was set and an adjournment made to the smoking room. 'I must thank you for your assistance, Sir!' 'Not at all; I was glad to be able to help in the matter. I think the case will do well, as the setting of the limb is perfect. That's my card.' Dr. McNicol saw 'John Eric Erichsen' on the card, and he told me he never felt so helpless in regard to making a remark fitting for the occasion. 'I'm glad,' he said, 'the fracture is set properly, for I learned the method out of your own book.' There was good-humoured laughter, and, as they say about other pleasing functions, a happy evening was spent. Within a few weeks of each other they are gone, McNichol regretted in his small sphere as was Erichsen in his larger.

SIR G. M. HUMPHRY.

So many leaders of the profession in the old country have died within the last few weeks, that though to each of them we would consecrate a few pages of our JOURNAL, it is impossible for us to do more than give the briefest notice of their life work. Sir George Humphry will be remembered, not so much as the great surgeon, though his fame as such was wide-spread in all the district between Norwich and the Metropolis, but as a great teacher and as a man of liberal mind and strong personal enthusiasm, to whose guiding genius is very largely due the fact that Cambridge, which thirty years ago yearly gave but two or three degrees in medicine, now stands at the forefront of the English Medical Schools, and in the training of the sciences upon which medicine is based is unequalled by any other university in Great Britain. For it was Humphry, who working with Sir George Paget, encouraged Foster, Balfour, Macalister and others to develop in Cambridge schools of practical physiology, biology and anatomy of the highest order. He himself for long years, first as Professor in Anatomy and later as Professor in Surgery, gave his services freely to the University in order successfully to accomplish the end which he had so much at heart.

As a teacher, few men have more influenced their pupils. His was the true method of *education,* the method of drawing out from each man all that was in him. It was a process often uncomfortable for the student. To sit there with Humphry's glistening eye fixed upen him, the long surgical fore-finger pointing imperatively at him, and the frequent long-drawn " Why ?' breathed at him, while the teacher probed further and further into the depths of his ignorance, was often excruciating. Often it was the most uncomfortable sensation that a man experienced during the whole of his University career. But the memories of such periods have remained green in the minds of every one of his pupils, and have, at least taught them to recognize how much of knowledge so-called, is superficial, while the intense personal interest which Humphry manifested in those that came under him, stimulated them to work and gave him an influence throughout the old country such as few surgeons have possessed.

WILLIAM MORANT BAKER, F.R.C.S.

We regret to have to chronicle the death of this excellent surgeon and amiable man, who died at Pulborough, Sussex, England, on 3rd October, after several years of ill-health. Mr. Morant Baker was born in October, 1839, so that he had barely completed his 57th year. While one of the junior teachers at St. Bartholomew's Hospital, he undertook the task of editing the fifth edition of Dr. Kirkes's "Handbook of Physiology," the work with which his name has been widely known to students of medicine, and whose success as a text book of this difficult subject gained him the confidence of a whole generation of instructors and students. He succeeded Sir William Savory as lecturer in physiology at St. Bartholomew's in 1869, and held the appointment for 16 years. He was elected assistant surgeon of St. Bartholomew's Hospital in 1871 and surgeon in 1882.

His reports of cases attracted wide attention and appeared from time to time in the journals. He was a careful clinical observer and an able and judicious operator. As an examiner at the College of Surgeons and the Universities of London and Durham, he was both just and considerate, and his character and personality made him an excellent mentor as well as friend of the student and also of the young doctor, while his kindliness of manner endeared him to both.

Failing health compelled him to give up his appointment at St Bartholomew's and seek rest in the retirement of the country, but in September he was taken seriously ill and passed away early in October.

LOUIS LÉON DESAULNIERS, M.D.

We regret to have to record the death of Dr. Desaulniers which occurred on the 31st October last, after only a few days' illness.

He was born at Yamachiche, P.Q., in 1823, and graduated in medicine from Harvard University in 1846.

He was Inspector of Prisons and Asylums for twenty-eight years and for many years chairman of that board.

He was well known in political circles, having been elected member of the Canadian House of Assembly in 1854, and member of the House of Commons in 1867 and again in 1878. He was a Justice of the Peace for the Province and also a Lieut.-Colonel of Militia.

THE

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Original Communications.

A NOTE ON PRIMARY CANCER OF THE VAGINA WITH THE REPORT OF A CASE.[1]

BY

F. A. L. LOCKHART M.B., Edin.,

Assistant Demonstrator of Gynaecology, McGill University ; Assistant Gynaecologist to the Montreal General Hospital, etc.

Carcinoma of the female genitals is by no means a rare disease, that of the uterus alone causing one-third of the number of deaths of women who have fatal cancerous disease. It occurs most often in those whose surroundings are unhygienic and who have to make a hard fight to earn their daily bread, the disease thus differing from myoma uteri, which is frequently observed in affluent well fed people. While this general statement is true, the seat of the primary origin of the growth varies very much in frequency, the cervix being by far the most common starting point. From here, it may spread in all directions, sending its treacherous and often undiscovered tentacles far out into the cellular tissue of the broad ligament, condemning its victim to certain, painful and speedy death, or else up into the corpus uteri, down into the vagina or into the bladder. In addition to the above origin of cancer of the vagina, this organ is frequently invaded by growths from the bladder, rectum or vulva. It is, however, one of the rarest of circumstances to find carcinoma having its primary origin in the vagina, and, when this does occur, the growth is usually of the papillomatous variety. Only one or two cases are reported annually in the whole of medical literature. Skene, in his most excellent work, "Diseases of women," utterly ignores the subject and it is but touched upon in any text-book which the writer has been able to examine. The rarity of the disease may be judged of from the fact that Martin, of Berlin, has seen but one case in over five thousand patients. The writer of the article upon "Malignant Disease of the Female Genitals," in the American text-book of gynaecology says:—"Primary cancer of the vagina is extremely rare. In a large experience, but three cases of it have been seen by the author." During the years between 1886 and 1894, only eighteen cases of this were seen at the Berlin Frauenclinic. Labusquière, of Paris, attributes the rarity of the condition to the fact that few cases come under observation until the cervix is affected. This suggestion, however, should not be given too much weight, as many writers would report their cases to be those of primary cancer of the vagina if the cervix was but slightly affected, while the vagina showed extensive disease. In support of this objection to Labusquière's theory it should be noted that in Steele's case (4) post-mortem examination (no operation had been performed) revealed one nodule on the anterior lip of the cervix and another in the fundus, the former having been discovered when the patient was first seen. While the above is true, Labusquière is quite right in throwing doubt on many of the reports published. For example, Oliver, in the report of one of his cases, says that the patient's age was 62 years, that she had been married for thirty-seven years, and had given birth to one child. The menopause came on when she was 47 years old. Her complaint was swelling of her left inguinal glands. For the last three years, she had had occasional hæmorrhages from the genital canal and that, nine months previous to his seeing her, swellings appeared in the left inguinal region, this being followed in three months by a similar swelling on the right side, these enlargements being but slightly painful. The skin over both was puckered. Local examination revealed (quoting the report verbatim) "the anterior wall of the vagina is so extensively invaded by a firm epithelial growth, that digital examination is impossible." There was no pain in the vagina or trouble with the bladder, urethra or rectum. Now here is a patient, reported to have suffered from an extremely rare affection without a careful examination having been made either before or after death to endeavour to ascertain the true seat of origin of the growth. The patient had had hæmorrhages from the genital passage for three years, and implication of the inguinal glands and vagina, but no extension of the disease to the bladder or urethra, all of the conditions pointing much more strongly to the uterus being the primary seat of the disease than that it began in the vagina. If it had started in the anterior wall of the latter, it is extremely unlikely that it would have become sufficiently extensive to entirely block up the vagina without affecting the bladder or, at least the urethra. In July, 1892, Fenger, of Chicago, read a most complete and interesting paper upon the subject (5) before the Chicago Gynæcological Society, in which he stated that his case made the fifty-seventh which had been reported; since his paper was written, reports of eight other cases have been published, viz.: one case each by Coley (1) patient's age 21 years; Leprevost (2) patient's age 32 years; Barber (3); Haven (3); Steele (4) patient's age 46 years; and Fenger (5) patient's age 60 years; and two (?) by Oliver (6) ages, 53 and 62 years. Thus it will be seen that the case reported below will make the sixty-sixth.

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[1] Read before the Montreal Clinical Society, Nov. 27th, 1896.

The seat of the disease is usually on the upper third of the posterior vaginal wall, out of the eighteen cases observed in the Berlin Frauenclinic, thirteen occupied this situation. This circumstance rather favours the theory of cancer being caused by irritation as it is the part which would be chiefly irritated by a pessary or any acrid discharges which might come from the uterus, the cervix and upper third of the posterior vaginal wall being continually in contact with each other in the normal situation of the uterus.

The age, at which it is said usually to occur, is from forty to fifty, but in the last six cases reported, in which the age of the patient is mentioned, only once did the above hold good. This number is, however, too small upon which to found an opinion.

As regards treatment, of course the only thing to be done, if the case is seen sufficiently early, is to remove the growth just as one would do elsewhere, but nowhere will the courage, ingenuity and skill of the operator be brought more into play than here, as each case requires an operation of its own, keeping in mind the necessity of cutting as clear of the diseased tissues as possible.

The following case occurred in the practice of the writer, the pathological report (without which no case report is complete) being kindly furnished by Dr. Wyatt Johnston, Pathologist to the Montreal General Hospital.

Mrs. C., aged 42 years, came to the gynæcological out-patient department of the Montreal General Hospital on February 20th, 1896. She complained of an extremely offensive watery discharge from the vagina, which had been going on for the last two months, and had been tinged with blood for the four weeks previous to her seeking advice. There was no pain, but she had lost considerable flesh, saying, in fact, that she had "grown ten years older in the last six months." She had been married for twenty years, and given birth to four full time children, the youngest being seven years old. In addition to these, she had had one miscarriage. Her menses had been irregular for some months. Leucorrhœa was profuse. The patient's history was entirely negative as regards the source of any local irritation, unless we can look upon the irritating leucorrhœa as a possible factor. She had never worn a pessary, her husband had always been healthy and there was no history of cancer ever having occurred in her family.

Upon making a vaginal examination, a growth the size and shape of a large walnut was to be felt protruding from the post vaginal wall at the level of the junction of the upper and middle thirds. The free surface was convex, uneven and spongy. This mass was attached to the vagina by a broad flat pedicle, which could not be felt at first owing to the manner in which the cauliflower-like growth overlapped it. The finger could be passed with ease between the cervix and tumour and no connection between the two could be felt, although this was very carefully sought for. The growth was fairly movable as though it had not implicated the peritoneum but felt as if it slid over this structure.

The cervix and uterus were practically normal, the former being quite soft and not imparting to the finger the sensation which would be produced by a carcinoma.

On inspecting the parts through the speculum, the above mentioned mass was seen to have greyish gangrenous looking patches here and there on the surface, which, in other places was red and angry-looking and bled on drawing the vaginal forceps over it.

The cervix was not torn but was red and inflamed around the os, owing probably to the action of the discharge produced by the growth, but it did not look at all like a cervix which is the seat of malignant disease. The inguinal glands were not involved

On February 22nd, the patient was anæsthetised and placed in the lithotomy position and the parts very carefully sterilized. After thoroughly exposing the growth an incision was made into the vaginal wall about a quarter of an inch below it. By working carefully with the finger and scissors, the peritoneum of the pouch of Douglas was exposed and the finger was passed up so as to completely separate it from the base of the tumour. The ease with which this was effected convinced me that the growth had not implicated the peritoneum, so it was decided not to perforate it if possible. By exerting traction upon the tumour and using the thermocautery knife, the whole mass was removed, the line of incision being in healthy tissue. The cavity thus made was packed with iodoform gauze and left to granulate. The patient made an uneventful recovery and left hospital on the 10th day after operation. At that time, the wound was contracting nicely but there were some granulations which bled upon pressure.

Pathologist's Report.—The tumour is the size of a walnut with a broad pedicle and over-hanging edges. The surface is fungating and presents numerous ragged, granulating areas. It projects above the level of the adjacent vaginal mucosa and, on section, is seen to be of a pinkish-grey colour and highly vascular. On scraping the cut surface of a vertical section no juice can be obtained except from the fungating area near the surface which yields an opaque greyish pulp, composed of epithelioid cells which are small and oval or pear-shaped, very few being flattened. There are no ribbed or prickle-cells.

Microscopic examination shows a fibrous pedicle, containing large blood vessels. Near the surface, the growth is distinctly alveolar, the alveoli being large and filled with solid masses of epithelial cells, the cells near the alveoli being pear-shaped while those toward the centre are rounder. There are no cell-nests nor do the cells show the character of squamous epithelium.

The growth is evidently a carcinoma and has apparently originated in the vaginal mucosa. The type of cell suggests an origin in the glands rather than from the surface epithelium. The base of the tumour does not appear to be distinctly infiltrated or show any certain evidence of new growth, although some of the lymphatics appear to contain epithelial cells. It may be called a "glandular carcinoma."

Cancer of the vagina is most often described as being secondary to a growth in some other organ such as the bladder or rectum, "but in the present case the appearance of the pedicle seems to negative that origin. The line of operation appears to have passed well clear of the edges of the growth."

REFERENCES.

1. New York Medical Journal, Aug. 1891.
2. La Semaine Medicale, Paris, 1891.
3. Boston Medical and Surgical Journal, Nov. 1891.
4 Lancet, London, 1893.
5. American Journal of Obstetrics, Feb., 1893.
6. Lancet, London, August, 1895.

THE TECHNIQUE OF VAGINAL HYSTERECTOMY.[1]

BY

L. COYTEUX PREVOST, M.D.

The paper which I am about to read before you is entirely devoid of the least pretension, the only merit that may recommend it to your indulgence being its brevity. I am aware of the fact that it contains nothing which is not already known to several amongst you; however I thought that it might not be altogether without usefulness. I read so many things about vaginal hysterectomy, I heard so much of it, I saw it being performed so many times and by the best gynaecologists, that I believed it advisable to add all this variety of information to my personal experience and conceived the desire of describing what I think to be the most practical mode of operating.

I want, at the outset, to draw your attention to the fact that I do not intend to discuss the superiority of vaginal as compared with abdominal hysterectomy; this question is still "*sub-judice.*" Therefore, I do not declare any sympathy with either the laparotomists or those who prefer the vaginal way; experience will tell wherein lies the truth. Still, we may, I suppose, even now admit that there are many cases in which the surgeon must operate through the vagina. The removal of the uterus per vaginam being considered by many as an operation far more difficult than cœliotomy, thus greater technical difficulty has been cited amongst the arguments offered by the laparotomists in favour of their mode of operating. I believe this to be an entirely delusive idea and I deem vaginal hysterectomy just as easy an operation and far less dangerous in its results than the surgical procedure which consists in removing the uterus through the abdomen, provided, it goes without saying, that one knows how to do that operation properly.

Without any further preamble, I come to the fact.

For the convenience of the description, I will suppose that we have to deal with a typical case, without any complications. For example, here is a woman, approaching menopause; she complains of lumbo-abdominal pains, has constant leucorrhœa; repeated metrorrhagias have failed to be controlled by several treatments including curretting; the uterus is more or less voluminous, with or without adhesions. We decide to remove that organ with its appendages hoping by that radical operation to obtain a complete and permanent cure of all the symptoms.

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[1] Read before the Canadian Medical Association, Montreal, August, 1896.

It is needless to remark, at first, that vaginal hysterectomy is a major operation and that here, as always, aseptic and antiseptic precautions must have been taken, especially with regard to the disinfection of the vagina.

The woman is placed in the dorsal position. Besides the anesthetist, two assistants are sufficient but necessary, one on each side of the operator. The one to the left, intrusted with the holding of the posterior retractor, may be sitting down, his task thus will not be so tiresome and he will, besides, be in a better position to see what is going on. The assistant to the right, besides making himself generally useful, will attend to the irrigation of the operating field. A reliable nurse will look after the gauze, swabs or mounted sponges and hand them to the operator when required.

First steps of the operation: curetting of the uterus, out of cleanliness as it were, if not for other reasons.

A retractor depresses the posterior commissure and is confided to the left assistant. The cervix is seized with two four-toothed strong volsellas, one applied on the anterior and the other in the posterior lips. The operator holds both volsellas in his left hand and the uterus is moved to and fro in order to ascertain its mobility and also the line of insertion of the bladder on the cervix. The uterus is then pulled down as much as possible. The anterior wall of the vagina may be raised by a superior retractor confided to the right assistant. The cervix is pulled to the left of the operator, care being taken to keep correctly in line with the transverse diameter of the vagina. With a sharp knife, an incision one inch long is carried on the side of the cervix to one centimeter of the os tincæ, cutting through the mucous and sub-mucous tissues only. The cervix is then shoved to the right and a similar incision made on the other side. The cervix being brought to the median line, the extremities of the lateral incisions are united by two others, one crossing the anterior part of the cervix near the os externum, and the other on the posterior surface, midway between the extremity of the cervix and the posterior cul-de-sac. Then incisions, called Segoad's incisions, divide the vagino-cervical mucous membrane into two flaps, one anterior and the other posterior; they greatly facilitate the separation of the tissues and especially help immensely to keep the ureters out of the way. They may be boldly made away up on the sides of the cervix, where the danger of hemorrhage is nill, owing to the absence of any large blood-vessels in a triangular space situated laterally an inch and a-half to two inches from the top of the cervix.

Those incisions being made, the superior retractor is removed and the volsellas raised carrying the cervix upwards, in the antero-posterior diameter. With the nail of the right thumb, the tissues are separated from the posterior surface of the cervix, the scissors being used occasionally should it be necessary, taking care to hug more closely the body of the uterus when reaching the deep parts of the posterior cul-de-sac. The finger or a nip of the scissors will soon allow the Douglass pouch to be burst through and if there should exist a purulent collection in the pelvic cavity, it will generally gush out at this step of the operation ; we must not mind it and let it run freely, but the irrigation should then be started in a good stream and kept up during the whole course of the operation.

The volsellas are now brought downwards to allow the separation of the tissues on the anterior surface of the cervix. This part of the operation is most delicate and must be attended to very carefully, owing to the danger of wounding the bladder or the ureters. The finger nail must be used here almost altogether or perhaps an occasional nick of the bistoury if the tissues do not yield readily. Care must be taken not to work too superficially nor too deeply ; in the latter case, the denudation will take place through the cervical tissue proper, which is liable to lead us astray ; " Shave the uterus, as it were " according to Segoad's expression. The cervix is well pulled down and the separation of the mucous and sub-mucous tissues carried well up, paying special attention to the denudation laterally in order to take the ureters well out of the way. No superior retractor must be used as it has been recommended, or else we may run the risk of bursting through the bladder with that instrument. It is entirely needless to look for the vesico-uterine peritoneal fold in order to cut it open as we used to do formerly, it will later on present itself under the blades of the scissors during the section of the uterus. Experience alone will teach when the denudation has been carried far enough ; sometimes the finger will tell when that point is reached : we feel that we are moving easily in the loose cellular tissue, laterally the finger can be inserted between the anterior and posterior folds of the base of the broad ligament and then feel the beatings of the uterine artery. The uterus is free everywhere from its surroundings, the denudation has been carried anteriorly, posteriorly, laterally, let us say a couple of inches, it is time to proceed to the first steps of the hæmostasia. The flow of blood so far has been insignificant, the irrigation sufficing to keep clean the operating field ; at all events, all hæmorrhage will cease as soon as the first clamps are applied. Armed with a long handled Pean's clamp, with short, stout bill, the operator pulls the cervix to his left and grasps the broad ligament away up on the left side of the cervix, about a quarter of an inch outside of the uterus. The instrument must at first be directed from outwards inwards, the tip towards the uterus. When engaged up to the joint, the clamp is straightened, the handles being carried towards the middle line and then pushed high up, the left hand relaxing in the meantime the tension of the cervix which so far has been kept taut; the catch is then closed to the maximum.

This step of the operation is of the utmost importance and I beg your pardon if I particularly insist upon some points of its technique. In fact the two greatest dangers of vaginal hysterectomy are hæmorrhage and the wounding of the ureters. One must never lose sight of the situation of the latter which can always be avoided with a little care. Thus, when the insertion of the vagina upon the cervix has been separated, and the bladder taken out of the way,the ureter is situated outside of the uterine artery, half an inch from the border of the uterus. If Segoad's lateral incision has been made, the distance between the uterus and ureters is increased still by half an inch. It is therefore through a space of an inch that the clamp can be moved without running the risk of catching the ureter. Now, with regard to hemorrhage, one cannot insist too much upon the necessity of carefully securing the uterine artery. As you know, during hysterectomy two arteries must especially be kept under control: the ovarian and uterine. Supposing that after the section of the superior border of the broad ligament, the ovarian artery escapes our grasp, we can always run after it, because the superior border of the ligament does not separate in two layers like that of the base, it remains as a floating shred carrying the artery which can be caught again. As far as the uterine artery is concerned, it is different. Should it escape, it steals away between the folds of the ligament and the hemorrhage is as formidable as it is difficult to control. Before applying the clamp or the ligature, it is generally easy to feel the pulsations of that artery in the side of the uterus provided the tension on the cervix has been relieved by the hand holding the volsella. It remains but to guide the hæmostatic forceps with the finger applied on the vessel. And again, since the ureter, owing to Segoad's incision, is situated one full inch from the uterus, we must not fear to bite a pretty broad portion of the ligament containing the artery to prevent the tissues from slipping out of the clamp should they be caught too close to the uterus.

Another remark: At this step of the operation, as well as further on, should there be a free flow of blood, care should be taken not to attempt to check it by applying a new clamp from below upwards outside of the first one at the base of the broad ligament. The ureter has been shoved out of the operating field, it is true, but it lies there still, hidden under the broad ligament and can always be wounded. I know a surgeon who met with this accident for having forgotten these abdominal relations.

Both uterine arteries have been clamped on either side, the tissues are severed with a pair of strong scissors, between the clamp and the uterus, and we may then immediately proceed to the section of the cervix. One blade of the scissors is introduced in the cervical canal, and the section extended on either side, right up to the clamps, thus leaving two flaps ; one on the pubic and one on the rectal side, both perfectly bloodless. The posterior flap is removed across its base. The anterior one is cut away also, taking care here to fix a volsella to the left of the remaining portion of the uterus before the cervical lip is totally removed. This being done, another volsella is applied to the right of the uterine stump ; both volsellas are grasped in the left hand and kept somewhat apart as the uterus is pulled down. With the scissors, a section is made on the median line between the volsellas, one blade in the uterine cavity, the anterior wall only is divided. A triangular section will thus be formed with a volsella fixed at either angle, the apex disappearing above. The volsellas are released and applied higher up, one on each side ; the uterus again pulled down, fresh tissue appears and divided as before at the apex. It is during this step of the operation that the vesico-uterine fold of the peritoneum is divided along the uterine tissue without it being necessary to pay special attention to it. Three successive tractions and divisions with the scissors will soon cause the fundus to pop out at the superior part. The right assistant introduces a retractor to keep the bladder and the anterior wall of the vagina out of the way. The scissors continuing the section divides the vault of the uterus as far as the posterior wall. The uterine cavity being exposed, should it be thought necessary, the mucous membrane may be touched with pure carbolic acid to prevent any possible infection of the peritoneal cavity. The uterus is again pulled further out, the volsella confided to the assistant, and the left index is introduced into the abdominal cavity, the palmar surface kept in contact with the peritoneal side of the wall of the uterus and used as a guide to a blade of the scissors which entirely divides the posterior wall. Here we are now, with the uterus divided in two halves, right and left. With the left hand introduced in the abdomen, the appendages are fished out and brought out down in the vagina, the tips of the fingers grasping the infundibuliform ligament. On the latter, a stout Pean's clamp is applied from above downwards, the tip of which touching that of the first clamp already fixed on the base of the broad ligament. The catch must be locked to the maximum, then the appendages and the left half of the uterus are cut off and removed. The same manœuvre is easily done on the other side.

A careful examination must now be made of the accuracy of the hæmostasia. The two sets of clamps are taken, one in each hand, and kept apart, the Trendelenburg rack is raised a few cranks. Those who have never witnessed the effect of the action of the Trendelenburg position in vaginal hysterectomy will be surprised in observing its results. The bowels recede and one can thoroughly inspect the whole of the pelvic cavity and see almost up to the diaphragm, according to Pryor's expression. The parts are sponged dry, and should a few points give, the oozing spot must be ligatured or seized by a long slender hæmostatic forceps which is left in with the other clamps.

The operation is over. Two strips of iodoform gauze are introduced high up, care being taken to cover the tip of the clamps, a strand of silk being attached to the lower extremities to recognize them the day of the removal. The vagina is packed with sterilized gauze, surrounding the handles of the clamps everywhere to prevent sloughing of the mucous membrane by the direct pressure of the instruments. A catheter is introduced to empty the bladder, a T bandage applied and the patient carefully carried to her bed.

Forty-eight hours after the operation the vaginal packing is removed and also the clamps; the deep strips of iodoform gauze are left in situ five or six days if there be no great elevation of temperature. If it were a pus case, it is advisable to remove the dressing and renew it every day. At any rate, no vaginal injection must be given until at least six hours after the removal of the last piece of gauze; when used sooner, some patients are known to have suffered immense abdominal pains sometimes accompanied with syncope.

The bowels should be moved on the third day by a glycerine enema and the patient allowed to get out of bed two weeks after the operation.

N.B.—Beware of the retractors: the bladder has often been wounded by the awkward manipulation of these instruments.

Operate in the vagina and on the median line. See what you are doing; the knife, scissors and clamps must never be used unless their action be controlled by sight and touch.

Should the tube and ovary be adherent and the application of the clamps of the infundibulo-pelvic ligament difficult, grasp the broad ligament close to the uterine cornu and cut the uterus out of the way. Then try again to detach, clamp and remove the appendages. If the task seems to be too hard, leave them in, no harm will follow: deprived of the uterus they will soon wither and become atrophied.

A CASE OF PERTUSSIS COMPLICATED WITH BRONCHO-PNEUMOMIA ; HÆMOPTYSIS, CONVULSIONS AND COMPLETE LEFT HEMIPLEGIA.

BY

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The variety of the complications of this case of whooping cough together with the rarity of those of a paralytic nature, may suffice as reasons why a note of its course and development should be placed on record.

Flora B., aged 5 years, was first seen at the out-patient department of the Royal Victoria Hospital, July 29th, 1896, a subject of whooping cough of a severe type and of four weeks duration, manifestly with pulmonary complications. The temperature was elevated, the respiration accelerated and diminished, resonance was noted in the left infraclavicular region with faint blowing breathing in this area.

The patient's family history showed tuberculosis prominently in both branches while her mother was a subject of pulmonary tuberculosis of an acute type. There was no history of syphilis.

The personal history of the patient is as follows :

At the age of two years she had a convulsive seizure which, from the history, seems to have been due to some digestive disturbance. At three she is said to have had la grippe. At four she had measles and a few months before coming under observation in July she had diphtheria.

On the 29th of July, headache and slight numbness in the lower extremities were complained of. On the following morning the headache was severe and on the afternoon of the 30th, after two very severe fits of coughing she was found unable to walk. The following day, 31st July, on her second visit to the hospital, complete left sided paralysis was observed and the patient was admitted. Her condition may be thus described. She was a fairly well nourished child of average size and development, showing marked pallour of surface, with left hemiplegia, temperature 102°, respiration 62, pulse 158. Her mental state was active.

Convulsive seizures began immediately after admission and recurred at varying intervals for about two and one-half days, during which the cough was troublesome and spasmodic in character. The convulsions were confined almost entirely to the left side and involved the upper and lower extremity. The head and eyes were turned toward the left and between the convulsive attacks nystagmus was present. The attacks seemed to begin about the left angle of the mouth whence clonic movements, rapidly extending, involved the left side. The right eye was more completely turned toward the left than its fellow, while on one or two occasions the right pupil was larger than the left.

The knee reflexes were absent, the plantar reflexes were present There was no ankle clonus. During a few days at the beginning there was involuntary passing of urine and stool.

Course of Case. The hemiplegic condition improved during her stay in the hospital while the signs in the lungs extended, dulness passing into the left axilla, and the right base anteriorily presented similar signs. On the third of August slight hæmoptysis began and recurred from time to time during the next few days. The sputum gave no evidence of the presence of tubercle bacilli.

The heart was negative.

The abdomen was also negative.

A trace of albumen was observed shortly after admission into the hospital but no casts were found.

From the 16th of August until her death on 26th September, she was at home, attended occasionally by Dr. J. Asselin, and to him I am much indebted for notes of the progress of the case, as well as for references to other cases recently reported.

In September, she was able to walk about, but always with some dragging of the left foot, and with the forearm flexed and held to her side.

The signs of pneumonia persisted ; the cough never left her. From the 10th of September until her death she suffered with much respiratory difficulty, and during the few days preceding the end, delirium supervened and progressive asphyxia soon ended in death.

It is a matter of not a little regret that no autopsy was done on this rare case, and though a diagnosis of pertussis, complicated with pneumonia and hemiplegia is made, yet about the cause and pathological basis of the paralytic condition there may be some question.

Among the possible causes one must include :

1. Embolism or thrombosis.
2. Tuberculous meningitis.
3. Cerebral hæmorrhage.

Since evidence for a source of an embolus is wanting, we may exclude it as a cause. There were no cardic lesions ; no manifest peripheral thrombosis.

The paroxysms of cough may have afforded a cause for thrombosis, but such is less probable than a hæmorrhage.

Tuberculous meningitis may induce alike the formation of thrombi or the condition favouring hæmorrhage, though the occurrence of the latter is doubtful.

Moreover, the hemiplegic attack was not an event in a case characterized by cerebral symptoms, but was an added event, a complication, in pertussis.

It will be agreed, we think, that the type of the complication corresponds pretty closely to hemiplegic conditions due to hæmorrhage.

It was sudden and complete. The leg recovered sooner and to a greater degree than the arm. It was followed by contractures. There was an exciting cause—the severe spasmodic cough. And as external hæmorrhages in whooping cough are not uncommon, a cerebral hæmorrhage need not be an unexpected event.

While hemiplegia is considered among the rarities of nervous complications of pertussis a search over clinical reports and text-books results in evidence sufficiently strong to corroborate the diagnosis of this condition as directly due to the paroxysm.

Among those whose opinions on these points have been reviewed in connection with this case, the following names may be given :-

Henoch in his book on Diseases of Children.

Samuel West, London Clinical Society Report, 1887.

Hopkinson, *British Medical Journal*, Vol. II., 1894.

Craig, *British Medical Journal*, June, 1896.

McKerron, *British Medical Journal*, September, 1896.

Recently, additional cases have been reported by Neurath, of Vienna, and Cassirer, of Berlin. While Bernhard's case, lately discussed in the Society for Internal Medicine in Berlin, presented the rare features of paraplegia occurring during whooping cough.

A CASE OF APPENDICITIS WITH THREE RELAPSES—VENTRAL HERNIA.

BY

J. Herbert Darey, A.M., M.D., of Northwood, Iowa.
Fellow of the American Academy of Medicine.

For the early history of the case I am indebted to Dr. C. A. Hurd, of Northwood, under whose care the patient was for about a year.

Jas. McQ., a strong healthy farmer of Scotch descent, aged about 30 years, was taken during the night of July 1st, 1894, with severe colic, accompanied with vomiting, severe localized pain in the right iliac region and obstinate constipation. Dr. Hurd advised operation, which was declined. So he put him on half teacupful doses of castor oil and morphia, with poultices to the iliac region. His sickness lasted till the middle of September, 1894. Jan. 19th, 1895, Dr. Hurd was called again, and found a large tumour with great tenderness in the right iliac region, fœcal vomiting, and obstinate constipation. This time Dr. Hurd insisted on operating as the only way of saving the man's life. The patient consented, and Dr. Hurd, with the assistance of Dr. Blackmer, of Albert Lea, Minnesota, opened the abdomen over the tumour, and at once found pus. It welled right out like a spring. The intestines were found all matted together, but the appendix could not be found. A drainage tube was inserted, and the wound stitched up. Fæces and gas escaped from the incision for some time. The soft parts were so undermined and necrosed that the stitches did not hold; but all sloughed out, and the wound had to be strapped together with plaster. This attack lasted till Feb. 20th, 1895. Shortly after he got up, he developed a ventral hernia. On the 20th of May, 1895, he developed a localized peritonitis in the site of the operation which was caused by his wife having a nightmare and accidentally striking him with her knee in the right iliac region. This attack lasted about ten days. In the spring of 1896, he went down to a Homeopathic Institute in Chicago, run by a Dr. Pratt, to be operated on for the ventral hernia, from which he made a good recovery. On the 13th of July, 1896, he came under my care for violent cramps in the stomach, obstinate constipation and vomiting. I ordered turpentine stupes, gave him some heavy doses of salts, and morphia hypodermically. After four visits I left him much relieved, with his bowels freely opened and no pain. My last visit was made on July 15th. On the 19th of July, I was sent for hurriedly to see McQ., and was told that something had gathered and broken in his belly. On examination I found that an abscess had formed in the site of the operation scar of the hernia and had burst externally in one spot, and that another spot was necrotic. The worst pain he complained of during my first four visits was not over the site of the operation, but on the left side of the abdomen, close to the linea alba. I cleansed the abscess cavity with carbolic acid solution and packed it with iodoform gauze. Next day the necrosed spot had completely sloughed away and there were two large ragged openings into the abscess cavity. I kept syringing out the cavity for several days and packing with iodoform gauze. I was somewhat afraid of an opening into the bowel from the character of the discharge, which had no fæcal odor however, but the abscess healed up kindly. I passed a probe about 4 inches directly downwards into the abdominal cavity. I thereupon armed a probe with Nitrate of Silver and passed it to set up adhesive inflammation if there were any such opening into the bowel. My last visit was made Aug. 6th, 1896, when he was practically well, with the abscess completely healed, and only a little granulating surface left at the level of the skin about the size of a nickel. Curiously enough the patient's wife told me subsequently, that on the very day of my last visit, but after my departure, when she took off the dressing from the granulating surface at night, she found two raspberry seeds on the cloth. He had partaken quite freely of raspberries, which his mother had sent him the day before. She was quite alarmed at this, but wisely said nothing to the patient and awaited developments, which by the way never developed. She showed me the little piece of cloth with two raspberry seeds on it, which she declared were just as she removed them from the wound. He has made a good recovery since and is now strong and well, though not able to do work of any account. I omitted to say that his last attack was brought on by his running against a projecting board in a hay-mow and striking himself directly over the site of the original injury. I think it is very evident, that if he had submitted to operation at the time of his first attack, he would have escaped all his subsequent trouble. As I write McQ., has just come into my office and says he is well and strong, and feels as good as ever.

RETROSPECT
OF
CURRENT LITERATURE.

Medicine.

On the Differential Diagnosis of Systolic Heart Murmurs.

LEUBE. "Zur Diagnose der Systolischen Herzgeräusche."—*Deutsche Archiv für Klinische Medicin*, Band 57, 3 und 4 Heft, 1896.

Whoever has carefully examined the chests of a very large number of patients, will have been impressed with the astonishing frequency of systolic cardiac murmurs where no other evidence whatever of heart disease is present. Under certain circumstances a diagnosis of the actual condition is well nigh impossible, and one must of necessity be non-committal when consulted. This question as to the presence of a true endocarditis or merely of a hæmic murmur or one due to myocardial disease of the papillary muscles, &c., may be readily differentiated in typical cases, but for a very large proportion of cases one can make no positive diagnosis, inasmuch as the condition present often seems one midway between organic and functional disease. Time and again one hears systolic cardiac murmurs which are induced by no discernible pathological lesion as examined at the autopsy. The importance of this is obviously great to all practitioners, both for diagnosis and prognosis ; to none more so than to the examiner for life insurance. Realizing himself the frequent doubts which have arisen in the differential determination of a certain proportion of systolic cardiac murmurs, Prof. Leube, of Würzburg, discusses the subject in a short article, dealing with the main features to be observed and the means whereby a diagnosis may be most easily reached.

Systolic murmurs of this doubtful nature are usually due to one of three conditions, viz. : 1. An ordinary anæmia ; 2, A mitral endocarditis with insufficiency ; and 3. A myocarditis associated with anæmia or intoxication, and inducing a relative mitral insufficiency.

Firstly. An ordinary anæmia will induce a systolic murmur because of changes in the region of the pulmonary artery—either that the vessel wall possesses less tonus than normal, and therefore the blood pressed into it causes abnormal stretching, and hence altered central currents in that portion of the circulation—or, as Geigel suggests, anæmia induces a lowered blood pressure in the larger vessels and the ventricular blood may be regarded as passing through an orifice which, under the circumstances, is abnormally small—a physiological stenosis. If the first of these apply, as seems probable in a certain proportion of these cases, the mitral valves would play no part in the causation of the murmur and their closure would be definitely heard, so that Leube regards this as a point of distinct importance in differential diagnosis, viz., that the hæmic murmurs should be always immediately preceded by the closure sound of the mitral valves. Other points of importance in the diagnosis are a normal area of præcordial dulness, a normal unaccentuated pulmonary second sound, and, as already stated, a systolic murmur loudest at the pulmonary area, heard too, perhaps, elsewhere, but with less intensity. The intensity and constancy of this murmur are of minor importance, being variable in different cases, and at different times in the same case, though, as a rule, they are soft and blowing.

Secondly. There is the systolic murmur arising from a mitral insufficiency through endocarditis. In most cases the diagnosis is clear. The shock in the 5th interspace, which obviously cannot be very forcible, the enlarged præcordial dulness to right and left, the accentuated pulmonary second sound varying in intensity according to the amount of blood pressure in the circulation of the lungs, all render it evident that the systolic murmur heard at the apex is of inflammatory origin. Leube insists, however, that a pure mitral insufficiency is much more uncommon than is generally supposed, and that a concurrent stenosis is not only quite frequent, but almost essential as a result of the morbid lesions present. These signs, however, apply in reality to those cases of endocarditis which have been in existence for some weeks—cases therefore of a subacute or chronic nature. For the acute endocarditides the conditions are in many respects different, while the systolic murmur may be unchanged. It is in these cases especially where the differential diagnosis is at times unusually difficult. There is no cardiac hypertrophy at first, and when the enlargement does appear, the left side is invariably first involved. The pulmonary second sound is, moreover, constantly accentuated, a condition absent in the cardiac signs associated with anæmia. This too, however, may, under certain conditions, be changed, and we are then bound to rely on the etiology for an explanation. The presence of an infectious disease or one of the specific fevers does not give rise, according to Leube, to "accidental" murmurs—but much rather to murmurs which originate through diseased conditions of the myocardium or valves themselves. To decide, however, as to which of these is present, offers several difficulties, though where moderate enlargement, and a relatively strong pulse are present we may with fair safety diagnose an acute endocarditis. Add to this the supervention of other murmurs, especially diastolic, and the decision may be absolute.

It is this *third* form however, viz. : decrease of the myocardium, which is especially complicated to the clinician. The murmurs associated with myocarditis of the papillary muscles or auricular wall are the result of a relative insufficiency of the mitral orifice, and so far as the valves are concerned, they are functional, not organic, in nature. The mitral valves though intact, do not become sufficiently apposed to obviate regurgitation, since the muscles to which they are attached have become diseased, and the chief factors which induce myocardial changes or muscular weakness such as to produce relative insufficiency at the valvular orifice and signs of regurgitation are various intoxications and anæmias.

The hæmic murmurs occurring at the base are of course readily differentiated from those due to a relative mitral insufficiency associated with anæmia, but the distinction between these last and an acute endocarditis involves greater difficulties, indeed is often impossible.

A murmur of relative insufficiency occurs usually at the apex or at all events is best heard in that situation. It is necessarily weak inasmuch as the myocardium in general is impaired and the stream regurgitating through the mitral orifice is slow. It is moreover most inconstant, often quite absent for a time, inasmuch as the muscle is rarely so degenerated that it cannot under sufficient stimulus be excited to temporary powerful contractions resulting in complete closure of the mitral valves. The systolic shock is weak and so also the radial pulse, while a definite enlargement of the præcordial area is always manifest, from dilatation of the weakened muscle walls. Add to this an accentuation of the pulmonary 2nd sound and the presence of ætiological factors (anæmia) and the diagnosis is in most cases made with moderate ease.

It is further to be remembered that many infectious fevers may induce a combination of endocarditis and myocarditis, in which case a differential diagnosis is difficult or impossible, particularly so when in the course of a chronic endocarditis the signs of lost compensation are superadded.

The Treatment of Anæmias.

DIEBALLA. "Beitrag zur Therapie der Progressiven Perniciösen Anämie.—*Zeitschr. für Klin. Med.*, 31 Band., 1896.

TOWNSEND. "Chlorosis, with special reference to its treatment by intestinal antiseptics."—*Boston Medical and Surgical Journal*, May, 1896.

There are few things less satisfactory to the scientific general practitioner than the estimation of the true value of many drugs and their effects in the treatment of disease. The impossibility of proving the therapeutic values of drugs is in many cases obvious, inasmuch as the individual predisposition, and the gravity of the affection materially determine the efficacy of drugs given. Hence the impossibility of judging from a limited series of cases as to the uses of any medicament and the absurdity of making a general rule for treatment based on observations in one case alone. Nothing is more pernicious and a greater self deception than to conclude from the beneficial effects of drugs in one instance, that to all others the remedy may be applied with equal effect, and it is just this which has recently been done in the present instance.

Dieballa has found in one case of pernicious anæmia that where persistent use of ferratin, bone marrow, arsenic, etc., failed to produce beneficial results, that salol was followed by marked benefit and what seemed to be a complete cure. The question of intestinal antisepsis is, however, not a new one, and because one case has been followed by favourable issue (post hoc, but not necessarily propter) the isolated observation is in itself valueless. He has further made the suggestive observation that a careful estimate of the leucocytes, by differential counts will prove of value in the prognosis of all anæmias in the following way: Pernicious anæmia may be considered in all probability as a disease of an infective nature in many instances—the exciting agent being found in the intestine, whence either directly or indirectly it exerts an injurious effect on the blood. If the blood be duly regenerated there will be but little change, but should the blood forming organs from any cause be incapacitated, the anæmia will be protracted and accordingly graver. By examining the leucocytes, Dieballa claims we can estimate the regenerative power of these organs, and particularly so by the eosinophiles. They are usually diminished in pernicious anæmia, so that should they be increased, we may conclude that the bone marrow, whence they probably arise, has good regenerative power and the prognosis is thus rendered favourable.

This observation, however, applies to one case merely, and hence is far from satisfactory, and at the same time there can as yet be no dogmatism as to the origin of the various leucocytes till our information as to the source of the different types is more accurate.

In marked contrast to this investigation is one by Townsend, who has examined a large number of chlorotics, systematically watching their condition from week to week and testing them where possible along identical lines. He has in this way afforded us valuable evidence of his method of treatment, the summary of which is as follows: Basing his inquiries on an examination of Forscheimer's theory of chlorosis, he employed Betanaphthol as an intestinal antiseptic for a number of weeks, finding that the condition improved to a moderate extent, and the average gain in hæmoglobin per week among 30 patients, was 1.05 per cent.; if at the end of 3 weeks no marked improvement occurred, the patients were given Blaud's pills. Thirty-one cases were treated with the iron alone, with an average gain of 5 per cent., *i.e.*, more than two and a half times as much as by the use of Betanaphthol. But a still more marked improvement was observed when Blaud's pills were preceded by a preliminary treatment of some weeks with Betanaphthol, for in 28 cases observed, it was found that by this means the average percentage of hæmoglobin was raised in 4.3 weeks from 48 per cent. to 82 per cent. Cascara was tried alone in seven cases without satisfactory results.

C. F. Martin.

Surgery.

The Diagnosis of Carcinoma of the Breast in its Early Stages.

A. Marmaduke Sheild. "Clinical Lectures on the Diagnosis of Carcinoma of the Breast in its early stages."—*British Medical Journal*, May 30th, June 6th, and 20th, 1896.

The importance of an early diagnosis of carcinoma of the breast, and the difficulties which are frequently encountered in deciding whether or not a mammary tumour be malignant, have led Mr. Sheild to consider seriatim in the above lectures those points which may aid one in arriving at a correct conclusion. He points out that it is the exception rather than the rule to find a case of scirrhus presenting all the cardinal symptoms of the disease. It occurs most frequently in women between the ages of 40 and 55, but it may be found in patients of 20 or again of 80 years. Its onset is not infrequently very insidious so that the first symptom of the disease is the detection of secondary growths, such as an insidious pleurisy in an elderly woman, the occurrence of spontaneous fracture, the detection of nodules in the skin or a paraplegia. Severe pain is rare in early cancer. The disease does not appear to attack one breast more than the other, and but rarely are both attacked simultaneously. A marked family history of malignant disease is of importance.

Retraction of the nipple, a sign upon which great value is laid, is present only in those cases in which the growth involves the milk ducts and the processes of fibrous tissue. As cancer may occur in any part of the breast, this sign is not necessarily present, but when associated with a hard lump near the nipple, one would be led very strongly to suspect malignant disease. Retraction is frequently simulated by a congenitally imperfect nipple, by chronic inflammatory contraction or by the shrivelling of a cyst which has discharged its contents, and again it is absent in those cases of rapidly growing carcinoma with a sparse development of fibrous tissue.

Women who have had sore and troublesome nipples with or without an eczema, or who suffer from a chronic inflammation of the breast substance in the region of the nipple, are more liable to cancer than others. Chronic disease of the breast however, does not necessarily lead to the development of cancer. A raw kind of redness of the areola accompanied by a viscid and watery discharge with itching and burning pains, the condition termed "malignant dermatitis" found in elderly women and which resists medication, is considered by the author as being an important predisposing cause.

The puckering of the skin resembling the dimpling seen upon a pig-skin saddle is mentioned as of great value in the diagnosis of carcinoma, and if associated with a hard tumour, the disease is almost certain to be malignant.

This puckering of the skin is to be distinguished from the dimpling which may result from the contraction following upon the presence of an old abscess or of a shrivelled cyst.

The condition of the lymphatic glands varies greatly in early cases. They may be enlarged or again normal in size. Even though they be enlarged, their increase in size may be due to tuberculous disease, chancre of the breast or even to mastitis.

Cancer is most likely to be confounded with acute or chronic mastitis, abscess, cysts, other tumours, phantom tumours or such rare conditions as keloid or syphilitic affections of the breast.

In chronic mastitis, the lumps in the breast, if palpated with the "flat" of the fingers, do not afford the sensation of a definite tumour. If a tumour is found by this method of palpation it is due either to scirrhus or to a small thick walled cyst. Again chronic mastitis is seldom strictly localized, whereas in carcinoma the growth is usually single and isolated. In infiltrating carcinoma, however, the similarity to chronic mastitis is great. If after careful palpation, a definite tumour is found, an exploratory incision is called for.

Chronic induration of the breast will frequently yield to application of Ung. Hydrarg. Co., combined with even pressure by means of a bandage. This method should be tried in young women for a few weeks, but in advanced women, it is better practice to remove the breast immediately.

Acute mastitis is occasionally simulated by a rapidly growing and infiltrating cancer. In chronic abscess, the detection of a spot of elasticity in addition to throbbing pain, sores or cracks about the nipple with a history of abscess of the breast, would naturally lead one to infer that suppuration is present, and as a rule, suppuration is a proof that the disease is not cancerous. It must be remembered, however, that carcinoma has been known to originate in the floor of an abscess cavity.

It is frequently with great difficulty that cysts can be distinguished from carcinoma, and this is particularly the case when they are small and thick-walled. Where more than one definite swelling can be made out, the probability is that they are cystic. In many cases, exploratory incision alone will determine the nature of the case.

Fibro-adenomata are found usually in young women, are frequently multiple, have not the stony hardness of scirrhus and are *encapsuled* so that they slip about beneath the fingers. Sarcomata are usually associated with cysts and are devoid of the stony hardness of scirrhus.

"Phantom tumours" are frequently due to a slight mastitis, a natural prominence as a costal cartilage or occasionally to a curious contraction of the pectoral muscle. The neuralgic symtoms, the hysterical condition of the patient, and a careful examination, under anæsthesia if necessary, will reveal the true nature of the case. In these cases, the fear of cancer is often very great.

When scirrhus attacks the skin of the thorax, it will be found covered with a large number of hard tubercles and examination of the mamma will usually give evidence of carcinoma. Tertiary syphilis of the skin about the areola usually shows distinct serpiginous outlines with dusky margins.

Keloid is apt to lead one into error in diagnosis. The shiny whitish or pinkish surface, the claw-like processes inclined to be pink in colours, stretching around into the healthy skin, and the burning pain are all characteristics of this condition.

Mr. Sheild lays stress upon the importance of exploratory incision in cases in which there exists any doubt as to the true nature of the disease, particularly in young patients. By incising the tumour before proceeding to the removal of the breast, there would be fewer cases of excision performed for conditions which prove to be non-malignant.

E. J. Semple.

Obstetric Note.

Vicarious Labour Pains.

Mrs. T., æt. 37, VI-para, was confined 26th October, 1896. At the beginning of labour the ordinary uterine pains were felt, but after a short time they suddenly ceased, and the patient complained of a severe agonizing pain in the left side of her head, the left shoulder and left arm. The pains in the head were continuous, but became more intense whenever a uterine contraction began, increased in severity until they were almost unbearable, at its acme and then decreased as it passed off. She always knew the approach of a uterine contraction by the increasing severity of the pain in her head, shoulder and arm; at the same time the hand grasping the uterus felt it harden and relax coincidently with the increasing or decreasing lamentations of the patient. No pain was felt in uterus or abdomen. This condition of things persisted throughout labour, otherwise the case was normal. Four years ago she had a miscarriage with convulsions prior to, during and for six weeks after labour. The same peculiarity in the site of her pains was observed then. Previous labours were normal. This case, which occurred in the practice of Dr. M. W. Lang, of Marine City, Michigan, presents some points of considerable interest. The peculiar train of nerve symptoms observed in the recent confinement, appeared first during a miscarriage four years ago complicated with convulsions. Were these convulsive attacks true eclamptic fits, or were they due to hysteria? If eclamptic, the peculiar nerve symptoms were probably caused by uræmic intoxication. If pregnancy occurs again, a careful examination of the urine would throw some light upon the case.

J. C. Cameron.

Pharmacology and Therapeutics.

Treatment of Tic Doloureux.

EWART, WILLIAM. "On the treatment of Tic Douloureux in connection with the question as to operation."—*British Medical Journal*, November 21st, 1896.

GILLES DE LA TOURETTE. "Diagnostic et traitement du tic douloureux de la face et de la migraine."—*La Semaine Medicale.* 24 Juin 1896.

DANA, D. L. "The treatment of Tic Douloureux.—*Chicago Medical Recorder*, August, 1896.

The medical treatment of this very troublesome affection so frequently proves a failure, that there appears to be a growing tendency on the part of physicians to refer cases that appear to be intractable to a surgeon for removal of the Gasserian ganglion, an operation which has now had a fair trial, and which, according to Keen, of Philadelphia, has had, notwithstanding the severity of the operation, a mortality of only 10.5 per cent. The alternative surgical treatment, consisting in section of the various peripheral nerves and removal of Meckel's ganglion is found to give only temporary relief, and, therefore, cannot be recommended.

The fact, however, that pathology has so far failed to reveal the constant presence of any one definite lesion in the affection, such as might be presupposed to exist, from the prevailing uniformity of the clinical symptoms, and that in some cases absolutely no definite structural changes have been found, should make us, as physicians, hesitate to refer our cases to the surgeon until we have with much consideration exhausted all our resources.

Surgery, writes Dr. Ewart, has thrown light upon two important points. It has shown us that the pain is bound up with the peripheral sensory function, at least as much as with the central function. A temporary interruption in the peripheral conduction by division or resection of nerves, causes cessation of the pain only until a return of the sensory function of the part, whilst a permanent interruption of one branch of the nerve does not protect against its subsequent extension, likewise peripheral, along another branch, whether vicariously or by overflow. Surgery has also shown that the Gasserian ganglion is a bridge, the cutting of which permanently arrests the pain.

Dr. Ewart then calls attention to the many clinical considerations which suggest that in all cases there is a constitutional or functional factor, and that in some this is paramount. A strong argument in point is the existence of a group of cases in which the gouty factor is easily manifest, but there are many others in which the gouty connection is more or less obscure and liable to be overlooked, and these he thinks make up a large proportion of the cases.

The frequency, he says, of a gouty association has probably been under-estimated, because it is often not an immediate one. It is the exception for sufferers from this neuralgia to be attacked by articular gout, and it might be said of them among others, that it is their misfortune that they never experienced gout in their joints. The same immunity is sometimes witnessed in the cutaneous manifestations of goutiness, which may alternate in the hereditary cycle with neuralgia

Several instances are related in which this gouty tendency had been overlooked by many previous physicians for a long period, but in which relief followed as soon as this factor was recognized. Dr Ewart thinks that it is the easily overlooked gouty tendency, rather than declared gout, which is commonly the basis of this affection, and that many alleged failures of medical treatment have been instances of failure to recognize this underlying factor. The following facts in the personal history of many sufferers, he thinks, may be regarded as pointing probably to gouty underlying conditions : 1. A healthy and often ruddy complexion. 2. The presence of Hebarden's nodules, or of tophi in the ears. 3. A previous history of gravel or of stone. 4. A long history, often beginning in childhood, of gastric, intestinal, and hepatic disturbances of a nervous type. 5. The abiding strength of the pulse which strikes us as no less remarkable than the resistance of the patient to the effects of long continued pain and insomnia. 6. The adverse influence of alcohol, and of certain forms of diet. 7. The presence of uric acid sand in the urine noted in several of the cases related.

In his treatment of his cases he lays special importance on diet and hygiene. Whilst ordinary neuralgia is benefited by alcohol, iron, by strong tonics, and by a generous diet, these are precisely the agents which often aggravate tic douloureux. Our object should be to raise nutrition without overloading the blood with nitrogenous waste. A modified vegetarianism, *i.e.*, a liberal supply of the vegetable foods and a more or less limited supply of the nitrogenous foods is generally indicated. Alcohol is generally to be avoided except in enfeebled and underfed subjects, when it may be allowed as a temporary help to nutrition. Sleep should be secured by carefully selected drugs. Rest in bed is indicated in all severe cases at the outset, until remedies have taken effect. For alteratives, he prefers, as yielding the best results, the salts of iodine and mercury, particularly their combination in the proportion of 20 to 30 minims of the solution of the perchloride of mercury to 6 or 10 grains of the iodide of potassium. Later on tonic measures are called for, which should be principally hygienic. Ordinary massage may be applied after one refreshing sleep is obtained, and it may gradually be replaced by "resistance movements." With this may be combined salt baths, and, later on, climatic treatment.

Under this treatment all the cases he relates, which had been sent to the surgeon for the express purpose of operation because medical treatment had failed, were improved and lost their pain more or less completely. In some under the influence of former surroundings, associated with fatigue and worry, the pain returned. How far operation in such cases may be postponed, or ultimately avoided, is a question which can only be answered after true and careful investigation.

Gilles de la Tourette regards some cases of this affection as closely allied in character to epilepsy, and recommends a gradually increasing daily dose of the bromides to be given until some amelioration of the attacks occurs. This dose should then be maintained for some months, and gradually diminished. A complete cure he says may under this treatment be obtained in some instances.

Dr. Dana's treatment, consists in the hypodermic injection of massive daily doses of strychnine. He begins with the use of $\frac{1}{30}$, and gradually increases until by the fifteenth or twentieth day from $\frac{1}{6}$ to $\frac{1}{4}$ is given. These massive doses are continued for a week and then gradually reduced. The patient is then placed on gradually increasing doses of potassium iodide. Rest in bed at the outset is insisted upon.

New Drugs.

MURRELL, WILLIAM. "Senecio Jacobœa in functional amenorhœa."—*British Medical Journal*, Vol I., p. 679.

FOTHERGILL, W. E. "On the use of senecio in disorders of menstruation."—*The Medical Chronicle*, November, 1896.

The common ragwort, *Senecio Jacobœa*, and some other members of the same genus have long enjoyed, in popular medicine, some reputation as emmenagogues. In old English herbals the ragwort is described as the "French Regulator," and in America *Senecio Aureus*, under the name of life root has long been used as an emmenagogue on the French sea coast, and several other species have been mentioned by various authors.

Within the last few years reports on this drug have been issued by Murrell, Dalché and Hein, and Bardet and Bolognesi.

The plant contains two alkaloids—senecine and senecionine in small quantities. A poisonous fatty acid has been found in two species growing in the tropics. Wiet found by experiments on frogs and guinea pigs that chlorohydrate of senecionine destroys the excitability of motor nerves, but leaves intact the irritability of muscle itself. In sufficiently large doses it is a curariform poison. It slows the heart's action, and in fatal doses stops the organ in systole.

With regard to the action of these drugs, Murrell writes : I found that it succeeded admirably in those cases in which the menstrual function, having been established and performed regularly for some months or years, was delayed or suspended as the result of exposure to cold or some similar cause. In cases in which the amenorrhœa was associated with or dependent on anæmia, senecio uniformly failed to do any good until the anæmic condition had been removed by iron, In cases in which the menstrual flow had never been established. senecio was frequently most useful, and in fuor cases of vicarious menstruation, nothing could have been more satisfactory. I am satisfied that senecio not only anticipates the period, but that it also increases the quantity, In many cases of dysmenorrhœa it promptly relieves the pain, and not unfrequently the headache from which many women suffer at these times. Senecio is apparently not an ecbolic.

Dalché and Hein conclude that the drug relieves painful menstruation if the reproduction organs are healthy, but not othèrwise.

Bardet and Bolognesi conclude that senecio has the property of provoking menstruation, though administered in small and harmless doses. They hold that it always tends to regularise menstruation. They suggest that it produces congestion of the reproduction organs.

M. Blondel, in a discussion on the properties of this drug at the Société de Therapeutique, said that he considered the reports on the physiological action of senecio to be both vague and contradictory, and that until the action of a drug is definitely known its indications and contraindications can not be established. Amenorrhœa, he said, is not a disease but a symptom, and its causes must be discovered before they can be attacked. In half the cases seen it was due to pregnancy, the diagnosis of which during the early months was beset with difficulties. Therefore he thought the treatment of amenorrhœa should always be indirect, both from the risk of causing abortion, and in order to preserve a true clinical spirit. The drugs which act directly in provoking menstruation, he thought, were unreliable, dangerous, and of merely temporary effect.

These remarks of M. Blondel, writes Dr. Fothergill, though likely to catch the sympathy of the superficial reader, are not really calculated to deter any one from giving respectful study to the work of these authors. For, to go over his objections in reversed order, granting that the so-called emmenagogues in use are satisfactory, there is no reason *a priori* why it should not be discovered that one or other of the active principles of the senecios is a true emmenagogue, reliable, safe, and perhaps even permanent in its action. Next, in certain cases, amenorrhœa is not a symptom of any pre-existent disease, but is due to the action on the nervous system of various external and temporary causes. Secondary bad effects, both mental and physical, follow the amenorrhœa, which in such cases is a primary disorder, and is certainly one suitable for direct treatment. Again, the difficulties in diagnosticating early pregnancy, if great, are not insuperable to all ; and there is no necessity for any one to administer a possible ecbolic while still in doubt as to the diagnosis. Lastly, if no drug may be used until its action is definitely known and its indications are clearly defined, there is an end to the introduction of new therapeutic agents. All that the most exacting can demand is that the introducer of a new drug shall give a working hypothesis according to which the drug may reasonably be supposed to act.

Menstruation expresses an anabolic surplus produced by the healthy human female from puberty to the menopause, except during pregnancy and lactation, the time of its occurrence probably being determined by the activity of a special centre in the lumbar part of the cord.

Now, says Mr. Fothergill, in the light of this view of menstruation, substances like iron, which affect the quality or quantity of the blood, are only indirectly emmenagogues. Similarly, substances which, by causing renal or gastro-intestinal irritation, promote pelvic congestion and uterine hæmorrhage, are also indirect in their emmenagogue action. To be a direct emmenagogue, a substance must act upon the nervous mechanism which initiates the discharge, namely. the hypothetical centre for menstruation. Thus an emmenagogue is quite distinct from an ecbolic, which is supposed to cause contraction of the uterine muscle by acting either on the fibres themselves or on their motor nerves. It is possible, he thinks, that senecio may be found to contain an active principle which is a direct emmengogue in the proper sense of the word, and it does not follow that this principle must be an ecbolic.

The following is his classification of amenorrhœa according to treatment:

No Treatment.—Physiological amenorrhœa—*i.e.,* before puberty, during pregnancy, during lactation, and after menopause. Amenorrhœa due to congenital or acquired deficiency or to absence of essential reproductive organs.

Surgical and other Local Treatment.—Amenorrhœa due to local defects, such as atresia vagina, atresia cervicis uteri, congenital or acquired neoplasms, etc.

Indirect Treatment.—Amenorrhœa due to general disease which so disturbs metabolism that there is no anabolic surplus—*e.g.*, anæmia and phthisis—where menstruation would be an unnecessary drain on the patient.

Direct Treatment by Emmenagogues—Amenorrhœa due to want of activity of the nervous mechanism initiating menstruation, caused by nervous disease, shock (mental or physical), fear or hope of pregnancy, etc,, including those cases in which the function has never been established, but where there is no local defect or general disease sufficient to account for its absence.

SHENNAN, THEODORE. "The action of Viburnum Prunifolium."—*Edinburgh Medical Journal*, November, 1896.

This drug was first introduced to the profession by Dr. Phares, of Mississippi, who in a paper published in 1866 recommended it as an astringent, diuretic, tonic and anti-spasmodic, but chiefly as a remedy for dysmenorrhœa and as a preventive of abortion. In 1879 Dr. Rockwell recommended it in dysmenorrhœa in delicate nervous women, in whom the pain was due to slight anteflexion, slight endotrachelitis or partial stenosis. He regarded it as anodyne, antispasmodic and toxic. Payne, in a paper read before the Medical Society of North Carolina in 1888, described experiments carried out on the lower animals with an extract of the drug. He concluded that there was no effect on sensibility. The chief action was on the motor track. Loss of reflex action, and of voluntary motion were produced by large doses, but nerve conduction was lost before muscular contractibility. Dr. Payne recommended its use in diseases with increased excitability of the motor centres, and in ovarian or spasmodic dysmenorrhœa, but considered it harmful in menorrhagia due to congestion or metritis. Joseph, of Landick, recommended viburnum very strongly in virginal dysmenorrhœa, especially in that form due to mechanical obstruction.

Dr. Shennan draws the following conclusions from the results obtained in some of his own experiments. In moderate doses there appears to be a diminution of reflex irritability, with a quieting effect on involuntary muscular fibre, and possibly some lowering of blood pressure. The indications for its use are as follows: 1. In habitual abortion, when this is not caused by syphilitic infection or by fatty placenta. 2. In threatening abortion, however caused, and at any period of gestation. 3. In dysmenorrhœa, if functional, spasmodic, or ovarian, it often cures; if due to flexion or stenosis it may afford much relief. 4. In the menorrhagias of the menopause, and in the nervous disorders of that time it is very beneficial. 5. It is of use in the diagnosis of false pains as it speedily relieves them.

A. D Blackader.

Pathology.

"La Doctrine des Cirrhoses du Foie."

Legry, T. "Historique resumé de la doctrine des cirrhoses du foie." —*Arch. Gén. de Médecine*, I., 1894, p, 80.

Rolleston, H.D. "A clinical lecture on cirrhosis of the liver in children."—*The Clinical Journal*, Sept. 9th, 1896.

Senator, H. "Ueber atrophische und hypertrophische Lebercirrhosis."—*Berliner Klin. Wochenschr.*, 1893, p. 1232.

Paltauf, R. "Cirrhosis hepatica *Lubarsch and Ostertag's.*"—*Ergebnisse der Allgem. Pathologie*, Pt. III., 1896, p. 316.

The "doctrine des cirrhoses du foie" held by the individual depended for long years upon the nationality of the individual—whether he has been born a Frenchman or a German—or if the individual had not happened to be born in France or Germany, upon the course of his education—whether he had founded himself upon the medical literature of one or other country. A fervour almost theological has been introduced into the discussion, and just as the old French surgeon declared concerning the circulation *malo errare cum Galeno quam cum Harveio veritatem amplectare*, so the latter day members of the Paris faculty for close on twenty years have preferred to err, if necessary, with Charcot, rather than embrace the gospel of Brieger and Litten, and German professors have not been behindhand in manifesting a like spirit.

Is hypertrophic cirrhosis a distinct entity ? According to the French school it was ; according to the Germans it was only a stage in the development of one morbid condition.

Happily with Senator's excellent discourse, national feeling has been greatly reduced. The French school now generally admits with Dieulafoy that there exists many cases of "cirrhose mixte," which in itself is a concession to German views, while many Germans, following Senator, agree that Hanot's hypertrophic cirrhosis with jaundice is a distinct though rare disease. When thus the matter is being argued without *parti pris* a favourable opportunity is afforded to review the whole matter dispassionately.

Beginning at the beginning, therefore, it will be remembered that "cirrhosis" dates only from Laennec. In 1819, in his clinical studies upon auscultation, he differentiated the contracted hobnailed liver from other hepatic conditions and gave it this name on account of its pale yellow colour. He, it is true, had wild notions as to the pathology of the condition, and it was left to another great physician of the century, Richard Bright, in another equally classical series of pathological and clinical researches, to explain incidentally in his studies upon the relationship of kidney disease to ascites, that the ascites of cirrhosis is due to obstruction of the portal system in consequence of the shrinking of the liver tissue. A few years later the exact histological nature of the process in the organ, received its explanation as being associated with deposit of new fibrous tissue throughout the liver.

Bright had noted that sometimes the liver remained enlarged, but it was not until 1857 that another well-known English physician, Todd[1], drew attention to the fact that two different forms of chronic hepatitis may be recognised, and showed that besides the typical contracted liver of Laennec with associated ascites, there occurred cases of enlarged cirrhotic liver without ascites, but with jaundice. As has so frequently happened with works published in our language, no notice was taken of Todd's work outside England, and not until 1874 and the immediately succeeding years, did Leudet, Hanot, and a series of French observers arrive at the same conclusion.

In 1876 Charcot and Gombault, from experimental and histological studies, showed that ligature of the common bile duct led to a form of cirrhosis characterised by the development of fibrous tissue around the bile ducts, and this they compared with the hypertrophic form recognised by Leudet and Hanot. They further called attention to the peculiar form of generalised cirrhosis, associated with congenital syphilis, and, as a consequence, they declared that there were three forms of cirrhosis :

1. Portal, or Laennec's cirrhosis, the ordinary atrophic form.
2. Biliary or hypertrophic cirrhosis.
3. Congenital syphilitic cirrhosis.

This classification it was that roused so strong an opposition among German writers. Brieger, Litten, Ackermann, and many others pointed out that both clinically and histologically it was impossible to make Charcot's distinction between the hypertrophic and atrophic form. There could be hypertrophied livers presenting all the clinical and histological characters of portal cirrhosis ; the contracted liver might be accompanied by jaundice ; there could be cases presenting clinically all the features of portal cirrhosis and showing like Charcot's biliary form, abundant new development of apparent bile ducts. In short, German writers denied that hypertrophic cirrhosis existed as a condition distinct from that which tends to end in the familiar hobnailed liver. And at this point the matter remained stationary for many years.

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[1] *Medical Times and Gazette*, December, 1857, p. 571.

Senator's object in his address before the Hufelandsche Gesellschaft was to attempt to reconcile the opposing schools. He pointed out that much of the difficulty that had arisen was due to the fact that the terms employed had not been used with adequate precision. There is, he admitted, a characteristic form of hyperthrophic cirrhosis wholly distinct from the ordinary portal cirrhosis, that, namely, first fully described by Hanot (and first recognised by Todd), but Charcot and Gombault had wrongly concluded that this and the cirrhosis succeeding biliary obstruction were one and the same disease, while again the term " hypertrophic cirrhosis" had been loosely and mistakenly employed for all conditions in which (to put it briefly) there exists cirrhosis with hypertrophy, and as a consequence what may merely be a stage in one disease had been compared with what is the constant characteristic of another.

In connection with cirrhosis of the liver, Senator urges that for a clinical diagnosis there are four features that have to be taken into account ; the size of the liver ; the presence or absence of jaundice ; the presence or absence of signs of portal obstruction (ascites, &c.), and the presence or absence of splenic enlargement. Taking this into consideration he concludes that there are three main forms of cirrhosis with secondary forms :

I. *Portal cirrhosis*, the ordinary " hobnailed" atrophic liver.

I. (a.) *Portal cirrhosis with Hypertrophy*—The hypertrophy may in the course of time give place to atrophy.[1]

I. (b.) *Portal cirrhosis with Icterus*—Such jaundice is a complication brought about either by gastro-duodenal catarrh or by pressure of the newly formed fibrous tissue upon the lymphatics and bile ducts It is superadded to the symptoms of portal cirrhosis.

II. *Biliary cirrhosis with subsequent atrophy*—This is the well established form following upon obstruction of the bile ducts (by calculi, &c.) with associated jaundice but without ascites and other signs of portal obstruction and without enlargement of the spleen.

II. (a.) *Biliary cirrhosis with enlarged spleen*—This modification, like biliary cirrhosis in general, is most frequent in females. Senator is unable to explain the enlargement of the spleen and is doubtful whether this is a transitional form to—

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[1] Several authors, including Rosenstein, have of late denied the existence of this form. While some cases showing hepatic enlargement followed by contraction may well in their early stages be enlarged fatty alcoholic livers, our knowledge of the stages of new connective tissue development fits in with the position taken by Senator, and with Paltauf I think we must acknowledge the existence of this group.

III. *Hypertrophic cirrhosis proper (Hanot's) with Icterus.*—In this form both liver and spleen are definitely enlarged: there is jaundice, but no evidence of portal obstruction. Cases are rare, affect males rather than females in middle age, and there is generally a history of either alcohol or syphilis or malaria.

It will be seen that Senator thus acknowledges the existence of biliary cirrhosis as one condition, of hypertrophic cirrhosis as a distinct condition. His classification is clear and rational and places the matter in a much more satisfactory position than any that preceded it, and assimilates much of the best in the French teaching up to that date.

Legry, in France, in the following year took nearly the same view, but advanced further in his classification of hypertrophic cirrhosis. In France there have of late been very numerous studies of fibrotic changes in the liver. Thus Kelsch and Kiener pointed out the occasional existence of malarial cirrhosis. Hanot and Chauffard have noted a cirrhosis accompanied by pigmentation occurring in connection with diabetes mellitus. Hanot and Gilbert have especially called attention to the generalised interstitial fibrous overgrowth which may accompany tuberculosis, comparable in many respects with that seen in congenital syphilis. So too sundry French observers hold that the intralobular fibrosis seen in severe cases of chronic obstructive cardiac disease may, in itself, lead to enlargement of the liver, and, as already stated, the enlarged fatty cirrhotic liver of many alcoholics has to be taken into account. So also there may be fibroid changes advancing inwards from the periphery in chronic perihepatitis, and lastly fibroid changes have been discovered following upon cholera, typhoid, smallpox and measles.

It has to be acknowledged, therefore, that while Senator's clinical classification is precise and takes into account the main forms of cirrhosis, it is very far from embracing all conditions, in fact that the "doctrine of cirrhosis" is a larger matter.

Is it possible to classify all these forms of cirrhosis?

In the first place we have to determine what to understand by "cirrhosis." We may include every condition of hepatic fibrosis under the term, or may only use it when the fibroid change is extensive and generalised and recognizable by the naked eye on section of the organ, or again when the condition is so advanced as to lead to the production of a clear train of symptoms. Opinions will differ as-to the course to pursue: the physician will prefer the latter, the pathologist the first, for it alone will aid him in investigating the whole matter. A third course, that of employing the word cirrhosis strictly as a clinical term, and referring to this condition pathologically as fibrosis would be excellent were it possible to maintain the separation.

Approaching this matter from the point of view of the pathologist, two main considerations must guide us: (1) the regions in which the fibroid change has its origin, and (2) the causes at work leading to the development of fibrosis.

Taking first the region of primary development, we have evidence that new connective tissue may show itself in the following portions of the organ:

1. In the portal sheaths around the branches of the portal vein.
2. In the portal sheaths around the bile ducts.
3. In the portal sheaths around the branches of the hepatic artery.
4. In the portal sheaths by extension inwards of external inflammation (primarily along the lymph vessels).
5. In the centre of the lobules around the intralobular branches of the hepatic veins.
6. In the lobules themselves, as a replacement fibrosis, following upon atrophy of the liver cells.

Or in other words, it is possible that in its origin a cirrhosis may be:

1. Portal.
2. Biliary.
3. Arterial.
4. Secondary (to perihepatitis).
5. Intralobular or centrilobular.
6. Replacement, or "pericellular."

J. G. Adami.

(To be continued.)

Reviews and Notices of Books.

Affections Chirurgicales du Tronc. (Rachis, Thorax, Abdomen, Bassin.) Statistique et Observations par le Dr. Polaillon, Chirurgien de l'Hotel Dieu. Professor agrégé à la Faculté de Médicine de Paris. Chargé de cours de clinique annexe. Membre de l'Académie de Médecine, Paris. Librairie, Octave Doin, Éditeur; 8 Place de L'Odéon. 1896.

In 1894, Dr. Polaillon published the first of three volumes, containing a resumé of his hospital experience, which began in 1879. The statistics and observations of the inferior extremities were dealt with in the first volume. The second volume issued a year later, gave the statistics and observations of the extremities, both upper and lower being included.

The present volume deals with the surgical affections of the trunk, and is a resumè of sixteen and one-half years' work in a large French hospital. The injuries are classified and full statistics given of results in each group. For example: "Contusions without wound," include 299 cases; 248 men, 51 women. None of the women were operated upon. Of the 248 men 245 were treated without operation, 3 were operated upon and 5 died.

The contusions of different regions of the trunk are dealt with, and many very interesting and instructive histories are given. An immense amount of clinical experience is put before the reader in these volumes. They are not very liberally illustrated, but what illustrations appear are clear and useful.
G. E. A.

Deformities: a Treatise on Orthopædic Surgery. Intended for practitioners and advanced students. By A. H. Tubby, M.S., Lond., F.R.C.S., Eng., Assistant-Surgeon to, and in charge of the Orthopædic Department, Westminster Hospital; Surgeon to the National Orthopædic Hospital, &c., &c., pp. 598. London and New York, Macmillan & Co. Ltd; Toronto, The Copp Clark Co. Ltd.

In this book Mr. Tubby gives his experience, gathered from his work in several of the London hospitals where deformities are treated.

He first takes up deformities of the spine and devotes most of his space to Potts' disease. In the treatment of this he strongly urges the advantages of recumbency, especially in children. He considers the plaster of Paris jacket is the best of all fixation and supporting appliances as being less complicated, less expensive and more easily applied, while at the same time it acts as an efficient support.

In speaking of the causes of scoliosis he says "the exceedingly faulty arrangement of music-stools and school-desks are responsible for many cases of scoliosis," an oft-repeated fact, the repetition of which does not seem to have much effect as yet in the building of school-houses. He also draws attention to the influence of occupation. Regarding the prognosis in this complaint he says "the amount of flexibility (of the spine) is the gauge of the improvement that may be expected under treatment."

In the second section he treats of deformities of the neck, chest and upper extremities. He takes up torticollis, deformities of the thorax, and deformities of the hand and fingers, both congenital and acquired.

Rachitis and the resulting deformities is the heading of a short chapter in which the various deformities resulting from this condition are grouped together, although most of the deformities are treated of under other headings. This section is useful for reference as showing what a prominent part rickets plays in the production of deformities.

The fourth section is devoted to the lower extremity. In the first chapter is described incurvation of the neck of the femur, a condition which has been recognized only during the past few years. It is looked upon by the author as a local development of rickets. Bow-legs and knock-knee come in for their share of notice. In speaking of the former the author says "Of all the deformities arising from rickets, bow-legs are the most common and the least serious." By this he means the curving of the tibia and fibula so frequently seen in children and so rarely in adults. He shows by diagrams, how the improvement is brought about as the bone grows. Under club-foot some interesting observations on the union of tendons are given. These go to show that perfect regeneration of a tendon is not possible but the uniting band remains scar-tissue and also that primary union of a tendon cannot be obtained.

Following the English practice, tubercular diseases of the knee and hip are not taken up, although, as the author himself says, "It is difficult to understand why these should not be included in orthopædic surgery." Certainly on this side of the Atlantic they form a large part of the work in this department.

With these exceptions, the ground is well covered. The illustrations are from drawings and consequently are of more use than if they were half tone plates from photographs, because, where necessary, they can be made sufficiently diagrammatic to illustrate the various important points.

Altogether we have been given a most useful and acceptable book.

R. C. K.

Ophthalmic Operations as practiced on Animal's Eyes. By CLARENCE A. VEASEY, A.M., M.D. With fifty-six illustrations. Philadelphia, The Edwards & Decker Co., 1896.

It seems very doubtful if Dr. Veasey's little book has a very useful purpose to fulfil and even in attempting to fulfil this purpose it is decidedly faulty.

It is a guide pure and simple for the performance of the usual eye operations on the eyes of dead animals.

The details are frequently very scrappy and the diagrams misleading. As an example of the latter, one need only refer to figure 29, page 44, where in the discission operation, the fingers of the operator are seen grasping the "Needles" not the handles of the needles.

As to lack of detail, it is most painfully evident in the description of the operation for advancement of a muscle, where goodness knows at what particular spot the final insertion of needles is to be made, or again in Mules operation all mention of douching out the globe is omitted.

Typographical errors are not wanting, for example "Staphâlomata" (sic).

The absolute exactness of detail necessary in all eye operations, is sufficient reason for a severe criticism of this work. J. W. S.

A Manual of Clinical Diagnosis. By means of Microscopic and Chemical Methods, for Students, Hospital Physicians and Practitioners. By CHAS. E. SIMON, M.D., Late Assistant Resident Physician Johns Hopkins Hospital, Baltimore. With 132 engravings and 10 full-page coloured plates. Octavo, p. 504. Messrs. Lea Brothers & Co., Philadelphia and New York, 1896.

This volume is an effort to supply students and practitioners with all the facts in clinical chemistry and microscopy which can be of practical value to them. Chemical and microscopic methods are described in detail, so that the student who has not had special training in such manipulations may be enabled to obtain satisfactory results. The subject matter covers the examination of the blood, the secretions of the mouth, the gastric juice, the fæces, the nasal secretion, the sputum, and the urine. There are also chapters on transudates and exudates, cystic contents, semen, vaginal discharges and milk. In every case a description of the normal material precedes the pathological considerations, and these latter are followed by a clear statement of the methods employed in the examination. While many of these methods are original Dr. Simon has evidently been careful to consult all the more recent work on this subject both in England and on this continent. The illustrations are excellent. We have much pleasure in cordially recommending the work to our students and to those practitioners who desire to keep themselves in touch with the more advanced methods of examinations. A. D. B.

A Practical Treatise on Materia Medica and Therapeutics. By Roberts Bartholow, M.A., M.D., &c., Professor Emeritus of Materia Medica, General Therapeutics and Hygiene in the Jefferson Medical College of Philadelphia. Ninth edition, revised and enlarged. D. Appleton & Co., New York, 1896.

A treatise that has reached its ninth edition so rapidly as this one has, calls for few remarks from the reviewer. The present edition maintains the same arrangement of its matter as the previous ones, but numerous alterations and additions have been made, slightly increasing the size of the volume. Much of the additional matter has been necessitated by the new synthelical remedies which organic chemistry is furnishing to us with such a lavish hand. Regarding these the writer remarks that they are for the most part proprietary ; those compounds which evolved by the substitution process, appear likely to possess certain powers are placed in the hands of friendly investigators to study their physiological actions, and are then duly exploited by the manufacturers. While it is undeniable that many important contributions have been made in this way to practical medicine, it is equally true that many have not sustained the pretensions of their promoters, and it is not yet possible to make out of the multitude a more than provisional selection. The author has used his best judgment in deciding which are the more promising. This treatise has maintained a high rank among the text-books on this subject for its clear statement of the physiological actions of the several drugs, and the very practical character of its therapeutics. A. D. B.

An American Text-Book of Applied Therapeutics. For the use of Practitioners and Students. Edited by J. C. WILSON, M.D., Professor of the Practice of Medicine and of Clinical Medicine in the Jefferson Medical College, &c , assisted by AUG. A. ESHNER, M.D , Professor of Clinical Medicine in the Philadelphia Polyclinic. W. B. Saunders, Philadelphia, 1896.

This is a handsome volume of over 1300 pages, similar in appearance and arrangement to the other American text-books published by the same firm during the past year or two. The list of contributors is a long one, and comprises the names of many who have acquired merited distinction in their special subjects. The arrangement of the volume has been based as far as possible upon modern pathological views, but the articles have been written from the standpoint of the practitioner. The various articles have been made as practical as possible, and the most valuable and most advanced therapeutic measures are clearly stated.

Among the more important contributions to the volume are the articles on Diphtheria by W. P. Northrup, on Enteric Fever by the Editor, on Leprosy by the late Beaven Rake, on Tuberculosis by J. F. Whittaker. on Syphilis by Orvilla Horwitz, on Malarial Fever by A. Laverau, on Rheumatism and Gout by James Stewart. on Diseases of the Stomach by Chas. G. Stockton, and on Disorders of Sleep by John K. Mitchell. We have consulted this work on many occasions during the past few months, and can cordially recommend it to our readers. as affording a reliable, and thoroughly up-to-date guide to the best therapeutic measures. There are numerous illustrations, the printing and binding are excellent, and a very full index makes reference to any subject an easy matter. A. D. B.

Correspondence.

ASSOCIATED PHYSICIANS AND SURGEONS OF SANTA CLARA VALLEY.

To the Editors of THE MONTREAL MEDICAL JOURNAL.

DEAR SIRS,—We ask you to give publicity to this letter and accompanying resolutions, to the end that in all communities afflicted with the pestiferous practice of lodge doctoring, physicians may be encouraged to assert their independence through organization.

Here, in Santa Clara County, Cal., containing 70,000 population, all the physicians of the County, numbering 124, have entered the compact that has ridden us of a slavish evil, and wrought independence and freedom for the practitioners of medicine. Investigation shows that medical compensation for lodge work averages about 15 cents on the dollar.

Even respectable lodge physicians feel a sense of degradation in giving their services for 15 cents on the dollar, and the ever-increasing spread of these alleged charitable institutions is absolutely destructive to the business of other physicians.

The main incentive of the persons who band themselves together in lodges is to get cheap doctoring ; they are willing to take but not to give. They belong to protective unions, and the same right should not be denied physicians. Ninety-nine per cent of these people are able to pay reasonable fees to physicians, but will not do so as long as a few doctors in every community for the sake of immediate gain can be induced to stand as driven guys to the lodge politicians. No preacher or lawyer would give his services to these people for 15 cents on the dollar. No grocery store or merchandise firm would contract to supply these lodges with goods at 15 cents on the dollar of actual worth.

The remedy indicated in the subjoined resolutions is simple, and manifestly efficacious, depending upon the personal honour and free-will of those concerned. Where one doctor temporarily profits by contract work, the business and ethical rights of fifty others are violated ; hence an overwhelming *esprit de corps* is created among physicians which will sustain a strict observance of the pledge.

LINCOLN COTHRAN,
Secretary.

San Jose, Cal., November 18th, 1896.

RESOLUTIONS ADOPTED BY THE PHYSICIANS OF SANTA CLARA COUNTY.

Whereas, Rendering professional service at a stipulated fee per capita per annum is derogatory to the medical profession, we, the undersigned physicians and surgeons of Santa Clara County, California, enter into the following agreement :

1st. We mutually. jointly, and individually, pledge our word of honour not to enter into any contract, or agreement, or renew any existing contract or agreement, either written, verbal or implied, to render medical or surgical services to any lodge, society, association or organization.

2nd. We will not render medical or surgical services to the members of the above mentioned bodies for less compensation than we charge the general public for similar services.

3rd. This agreement shall not be construed to affect existing contracts between physicians and surgeons and the above mentioned bodies.

4th. These pledges shall take effect and be in force for a term of three (3) years from and after May 22, 1896.

This agreement shall not apply to hospitals and purely public charitable institutions.

The duty of the Standing Committee shall be to interview new coming physicians, etc., and, in general, to carry out the purposes of the agreement. Communications may be addressed to the Chairman or Secretary.

Society Proceedings.

MONTREAL MEDICO-CHIRURGICAL SOCIETY.

Stated Meeting, Oct. 16th, 1896.

George Wilkins, M.D., President in the Chair.

Malformation of the Hands and Feet.

Dr. A. E. Garrow exhibited a child with malformation of the hands and feet, and showed an excellent skiagraph of the hands taken by Professor Callendar, of McGill University, a full report of which, together with the skiagraphs, will be published next month.

Dr. Jas. Bell pointed out the fact that here the usual history of heredity was wanting. No other members of the family or of former generations had been similarily affected. He contrasted this with a case exhibited by himself on a previous occasion in which several members of one family had a similar malformation.

Mouth Concretion.

Dr. Jas. Bell exhibited a large mass of calcareous matter which he had removed from the mouth of a patient under his care, a report of which will be published later.

A Case of Acute Hodgkin's Disease.

Dr. J. T. Argue read for Dr. G. D. Robins and himself a paper on a case of this disease. (See page 310 October Number.)

Dr. H. A. Lafleur thought that we had been attaching too much importance to the microscopic appearances of the blood in such cases; and judging of the disease by the state of the white corpuscles, leukæmia might exist without much increase of the leucocytes, and at times where the patient had been under treatment, as far as the blood examination went, it was no longer leukæmic blood, though the other signs of the disease are present, such as enlargement of the spleen, liver and lymphatic glands.

yphilitic Nephritis— atal.

Dr. N. D. Gunn reported the following case:

J. L., aged 25, traveller, consulted me on July 17th, 1896, for swelling of the face, and fulness of the abdomen which he had noticed four days before, for the first time.

His family history was good, and his personal history revealed nothing bearing on the case save that he had contracted syphilis six months previously, and had been under treatment ever since, taking large doses of bichloride of mercury with good results so far as secondaries were concerned, as the rash and sore throat were of the mildest type.

On examination I found general anasarca, temperature 99$\frac{2}{5}$°, pulse 92, slight accentuation of the second sound of the heart. The liver seemed slightly enlarged but was difficult to palpate owing to tension in the abdomen. The urine was acid, in consistence like thin linseed tea, of S. G. 1022, and solid on boiling.

The patient was put to bed on a milk diet with the administration of citrate of potash and digitalis. The urine in 24 hours was in amount 10 ounces of S. G., 1020, and albumin over the line marked 12 on Esbach's albuminometer; it contained no blood but plenty of epithelial casts.

4th day. Urine 20 oz., no change in albumin.

6th day. The œdema was greatly increased. Temperature 102$\frac{1}{2}$°, pain and tenderness in both groins, slight diarrhœa, urine 10 oz. Hot baths every six hours with hot abdominal compresses in the intervals were ordered.

7th day. Urine increased to 24 oz., temperature 100°, some delirium and twitching of the eyelids present.

8th day. Temperature normal, pulse 88, no pain, great distension of the abdomen, slight tenderness over the liver, bowels active, urine 27 oz., S. G. 1010, no change in the amount of albumin.

It is not necessary to give daily details after this but only the marked changes in the case.

On the 12th day mercury was given and the digitalis stopped; by the 20th day the urine was 40 oz., albumin down to line 4 (Esbach.)

30 day. Urine 80 oz. Albumin again increased even above line 12, S. G. 1006.

32nd day. Urine 18 oz. No chemical or microscopic changes.

The mercury was suspended, and digitalis and strychnine supplied instead, hot packs and hot air baths were continued as before. From this to the death of the patient on the 12th of October there was a gradual decline. Great ascites developed, with liver tenderness pointing to organic disease of liver; the urine varied between 25 and 50 oz., S. G. never above 1008. Casts were numerous.

The damage to the kidneys was evidently irreparable. No uræmic symptoms developed until 3 days before death, when a semi-coma, which gradually deepened, came on; there were no convulsions. Death resulted from heart failure.

The interesting points about this case are:

1st. Could this nephritis have been induced by the large doses of bichloride of mercury which this man was taking at the time it developed?

2nd. The treatment hinged on whether this complication was a medicinal irritation or a manifestation of the original disease. Should I have increased the dose of mercury above ½ grain a day, which he was taking when the disease developed? I stopped it for two weeks, then began again with small doses which seemed to do some good for a few days, then a change for the worse came and I stopped it again. I believe I should have continued with mercury from the beginning in doses sufficient to produce the ordinary constitutional symptoms.

Poisoning by a Belladonna Ointment.

Dr. F. W. CAMPBELL related the following case in practice: An acute rash is sometimes difficult to decide as to its character, especially in a defective or artificial light.

The other night he was called to a woman who had been confined three or four days previously. On examination he found a slight rash, universal all over the body, which had the appearance of measles, and somewhat cresentic in its character. Her temperature was a little over 101°. He forgot the exact figure, and the pulse was somewhat quickened. The patient was being treated with a view of getting rid of her milk. On enquiry he learned that an ointment containing Extract of Belladonna was being used on the breasts. All was then clear to him. He had a Belladonna rash to deal with. Dr. Campbell also mentioned several cases of Belladonna poisoning from the local application of Belladonna liniment in small quantity.

Stated Meeting, Oct, 30th, 1896.

GEORGE WILKINS, M.D., PRESIDENT, IN THE CHAIR.

Gangrene of the Foot.

Dr. G. E. ARMSTRONG showed a young woman 24 years of age with spots of gangrene on the dorsum and inner and outer border of the left foot. These spots were seven in number and varied from the size of a 5 cent piece to an area 2½ inches in diameter.

He said; the patient was admitted to the Montreal General Hospital ten days before.

Four years ago she suffered from typhoid fever and during convalescence her left leg became painful and swollen and remained so for several weeks, ultimately returning to its normal shape and size. This is the fourth time that spots of gangrene have appeared on the left foot and leg during the past two years. One patch occurred just behind and a little below the left knee joint.

About six months ago the patient had been under Dr. Kirkpatrick's care in the Montreal General Hospital for a similar condition.

Her father, mother, and several brothers and sisters are living and well.

The onset occurred suddenly without any recognizable symptoms and, so far as I can ascertain, without any probable exciting cause. She denies having worn tight shoes, or having received any injury to the foot, and says she has not been taking medicine of any kind.

Her heart and lungs are normal. Urine high coloured, sp. gr. 1030, acid, and contains no albumin or sugar. Microscope shows amorphous urate. and crystals of uric acid.

It is as yet impossible to say hew deep these sloughs will prove to be. At any rate it is quite evident that they involve the whole of the true skin.

I am inclined to think that quite possibly the phlebitis or end-arteritis following the typhoid may have had an etiological influence. It may also be of the nature of Raynaud's disease. It has been suggested that the condition is self inflicted. I don't know how she could have produced this condition if she had tried. I am quite sure that I could not do it. I don't know what I could use to gain this result. This is the fourth time that she has suffered from a similar condition, and always on the same foot and leg. There is not, so far as I know, any other evidence of hysteria about her.

These patches do not all lie within the area supplied by any one artery or any one nerve.

Dr. R. C. Kirkpatrick said that the patient had been under his care some months before, and the leg was then in a much less marked but somewhat similar condition. There were two or three spots of gangrene on the foot which were quite superficial, and his impression had been that they were self-inflicted.

As bearing on this case he had brought another patient somewhat similarily affected, the condition in this case being undoubtedly due to a burn from a hot water can. He thought that the lesion was more likely to have been produced by the patient than due to an arrest of the arterial circulation.

Dr. F. J. Shepherd had come to the same conclusion after seeing the case, and referred to several other cases that he had met with, notably, one in which a series of rings of gangrene appeared, following each other at short intervals. As soon as a watch was set upon this patient and her hands kept tied the eruption ceased appearing.

Dr. D. F. Gurd referred to a case which had come under his notice. A slough appeared on the skin of the leg in a child during convalesence from scarlet fever although no hot applications could have been the cause.

Dr. JAS. STEWART asked if the patient showed any evidence of hysterical stigmata. He did not know of any means either from heart or irritants that could induce such a condition. He considered it neurotic in origin.

Dr. ARMSTRONG replied, that so far as known the patient showed no evidence of hysteria, and he agreed with Dr. Stewart that no artificial means, that he knew of, could produce deep sloughs of such a character.

Aneurysm of the Ascending Portion of the Aortic Arch, Leading to External Rupture.

Dr. JAS. STEWART and Dr. J. G. ADAMI reported this case. (See page 386 November Number.)

Limitations of the Visual Field of Intracranial Origin.

Dr. J. W. STIRLING read a paper on this subject. (See page 392 November Number.)

Dr. JAS. STEWART referred to one of the cases mentioned by Dr. Stirling as showing the great value of a thorough examination of the eyes and ocular muscles in determining the nature of intracranial disease.

Hæmorrhage of the Bowels in a very Young Typhoid Patient.

Dr. D. F. GURD read the following case report: Typhoid fever is seen in persons of all ages, but is much less frequent at the extremes of life. Authentic cases have been reported at the ages of 70, 80 and even 90, and Dr. Murchison exhibited the specific lesion in the intestines of an infant of six months. Previous to 1840 it was thought that young children were exempt from this disease but Ribbot and Tampin demonstrated conclusively that they were not, and that most of the cases previously known as infantile remittent were typhoid fever.

Hæmorrhage of the bowels is a rare complaint in young children. This fact is my apology for calling your attention to a case which occurred in my practice.

On Nov. 8, 1895, I was called to see Lizzie H., aged 27 months, who was suffering with fever and slight tickling cough. From the history of the case' as obtained from her mother, an intelligent lady, I judged she was then in her sixth day of fever. The case ran a mild course till the evening of the twelfth day, when she had a bloody stool; this made me anxious and I got a trained nurse in attendance. At 8 a.m. the next day she had another, which the nurse said contained about 2 oz. of blood. At 2.30 the following morning, i.e., the 14th day of fever, she had a small stool, having about an ounce of blood in it. From this time on the temperature rapidly declined, so that it reached normal on the 21st day and never again went above it. The blood in the stools was bright.

A Case of Cephalhæmatoma Causing Bony Deformity; Gradual Absorption.

On Sept. 16, 1895, G. H., was born with the aid of forceps after a fairly tedious labour. No excessive force was needed. The child had what looked like an ordinary caput succedaneum the size of a large orange.

Next day the nurse called my attention to baby's head, which I examined, and found over the left parieto-occipital region the commonest form of hæmatoma, that is, a blood tumour between the periosteum and the bone. I assured the anxious mother that it might take some weeks, but that it would entirely disappear.

After about three weeks flakes or plates of bone could be felt over the tumour, and those slowly grew larger. When pressure was made over them they would bend inwards, giving a peculiar crackling sound and feel. These plates, perhaps four or five in number, gradually united and finally completely covered the tumour, which by this time had lessened by absorption to about three-quarters of its original size. The child's head at three months was very unsightly, having this large, firm, bony prominence. I saw the child this week and found the deformity much lessened, owing to the greatly increased size of the head during the past ten months, and this, with a fair growth of hair, has masked almost all appearance of anything wrong in the shape of the little fellow's head. I might have removed the contents of the tumour when I found that it was being absorbed so slowly, either by aspiration or excision, but I think the already greatly diminished deformity has justified my leaving the case severely alone.

This condition is said to occur once in 250 new born infants. I have seen several, but never one before which had a firm, bony covering form over it.

Resection of the Bowel.

Dr. R. C. KIRKPATRICK read the following report, to which is appended the pathological report of Dr. W. H. JAMIESON, who exhibited the specimen.

J. C., aged 63, was admitted to the Montreal General Hospital on Sept. 18, 1896. He said that for three weeks he had not had a motion of the bowels, and that for a week before that he had been much constipated. Previous to this time (four weeks before the date of his admission) he had been well. He had been treated by all sorts of purgatives and injections before he came to the hospital.

The abdomen was evenly distended (37 inches in circumference at umbilicus), and tympanitic throughout. Liver dulness present ($1\frac{1}{2}$ inches on mammary line). No tenderness. Digital examination of the rectum revealed nothing abnormal. The case being urgent, the abdomen was opened in the middle line. The small intestines presented and were distended.

On drawing over the sigmoid flexure it was found to be distended until the lower part was reached, where a constriction was found. This was resected, and the ends of the bowel united by a double row of silk sutures. As soon as the rubber tubing (which had been tied round the bowel above and below the field of operation to prevent the escape of fæces) was removed, the bowels commenced to act. A large rubber tube was inserted into the rectum and a copious motion was passed, I should think a couple of quarts of fluid fæces. This line of union being apparently tight, the abdominal wound was closed. The patient died forty-nine hours after the operation, the highest temperature being 100° and the pulse 100. The abdomen remained soft and flaccid throughout. He had a slight bronchitis before the operation and the ether made this worse, so that I was inclined to look on the pulmonary condition as the cause of death. However, the pathologist has another story to tell, namely, leakage from the line of the re-section and septic peritonitis.

How should such cases be treated ? Looking back on this case I feel strongly that the best treatment would be a temporary inguinal colotomy. Then, when the enormous collection in the bowels had been got rid of, a resection could be done with much greater prospect of success. The bowel could be opened at once, or if the patient's condition would permit of it, after twenty-four or forty-eight hours, when there would be no danger of infecting the peritoneum by the discharges.

The strain put upon the line of union by the contents of the bowel is very apt to be too much for the sutures or whatever device is used to approximate the cut ends, especially as there is a chronic inflammation going on, and consequently leakage takes place. Again, such patients have very little resisting power, the absorption from the bowel having already depressed the vital powers.

Pathologist's report—On opening the abdomen there was evidence of fibrino-purulent peritonitis. The abdominal cavity contained about ℥viii of greyish-yellow purulent fluid with fæcal odor. In the region of the sigmoid flexure of the colon a line of sutures extends around the circumference, a portion evidently having been removed. The omentum is stitched to this at one point. The contents of the bowel escape here. On opening the bowel the edges are found in apposition. No leakage taking place anywhere except from a small spot corresponding to where the omentum is attached ; the edges of the wound here are un-united and gangrenous. A perforation, through which a good sized probe can be passed, leads through a mass of omental tissue between the sutured edges and allows the escape of the contents of the bowel.

Anatomical diagnosis—Resection of bowel for adeno-carcinoma. Incomplete union of edges with escape of bowel contents into peritoneal cavity. General septic peritonitis. Broncho-pneumonia. Brown atrophy of the heart and some fatty change. Chronic interstitial nephritis. Fatty degeneration of the liver. Infection by streptococcus and colon bacillus.

MONTREAL BRANCH OF THE BRITISH MEDICAL ASSOCIATION.

The annual meeting of this Branch was held on the 2nd December, at 9 o'clock, in the rooms of the Association, Dr. Roddick in the chair. There were present Drs. J. A. Hutchison, Wm. Gardner, James Perrigo, G. G. Campbell, K. Cameron, Morrow, E. P. Blackader, J. G. Adami, Kirkpatrick, Proudfoot, G. T. Ross, Birkett.

The President reviewed the work of the past year as follows:

The year about to terminate has been an eventful one in the history of this Branch. Your Council has been called to meet many times during the year. Quarterly meetings have been regularly held and we are indebted to Drs. Adami, Johnston, Macphail and Martin for pathological specimens shown at each meeting. We are also indebted to the following gentlemen for contributions towards the programme of each meeting: Drs. Armstrong, Kirkpatrick, Evans, Alloway, James Stewart and others, for many interesting specimens shown.

During the past year, By-law No. 4 was amended so that five instead of three ordinary members are in future to be elected to Council.

The following new members were elected during the year: Drs. Edward Semple, G. A. Berwick, H. B. W. Carmichael, F. J. Hackett, R. C. Kirkpatrick, George Fisk, S. F. Wilson and J. A. Henderson making 85 present members.

On January the 18th, the British Medical Association was invited unanimously by the Branch to hold its annual Meeting for 1896 here, provided Carlisle would forego her claim. The invitation was cabled to England, but it was found to be impossible, as arrangements had already been made in that city. However, at the next meeting on April the 15th, a further invitation was tendered the Council in London to meet here in 1897, and a meeting on June 26th following, Drs. Armstrong and Adami were elected delegates to the annual meeting at Carlisle, to further press the matter, the result being that the invitation was accepted, and Dr. T. G. Roddick, President of this Branch, was elected to the distinguished position of President-elect. As a consequence of this, your Council immediately set to work to organize for the coming event, and at a meeting on September 14th, presented a representative list of names that might constitute desirable committees to carry on the various branches of such an organization.

The following have applied for membership: Drs. R. F. Rorke, South Woodslee, Ont; Charles F. Martin, Montreal; George A. Dickinson, Port Hope, Ont.; William McDermid, Vankleek Hill, Que.; Robert B. Martin, Cleveland, Ohio; W. B. Nesbitt, Toronto, Ont.; John A. Hutchinson, Westmount; George E. Josephs, Pembroke, Ont.; J. V. Clemesha, Port Hope, Ont.; Joachim Guimane, Toronto, Ont.; James Ross, Dundas, Ont.; T. P. Shaw, Montreal; Henry Lunan, Campbelton, N.B.: A. L. DeMartigny, Montreal; William Burnett, Montreal; A. G. Morphy, Lachine; H. J. Harrison, Cornwall, Ont.; Grosvenor Hayes, Barre, Vermont; William Mason, Montreal; George Villeneuve, Montreal; Ridley Mackenzie, Montreal; H. D. Hamilton, Montreal: Ahern, Quebec: David A. Hart, St. Lambert's, Que; W. H. Jamieson, Montreal; J. C. Webster, Montreal; Jas. Warburton, Charlottetown, P.E.I.; A. F. Garrow, Montreal; Henry Beaumonte Small, Ottawa. These 29 new members were elected.

Dr. Hutchison, the Treasurer, then read his report, which was duly adopted and showed a balance of $37.03 on hand. Drs. E. P. Blackader and K. Cameron were nominated auditors by the chairman.

The question then came up as to what should be the annual fee to this Branch, including the subscription to the *Journal*, and after much discussion it was moved by Dr. Hutchison, and seconded by Dr. Kirkpatrick, that the sum of $5.25 be the fee for 1897 for new members living outside the city and its suburbs. Carried.

The election of officers for the ensuing year was then proceeded with. It having been suggested by the meeting, that in view of the fact that the present officers having already in hand the preparations for the coming meeting here next August, it would be advisable that the same officers be elected again for the ensuing year, this was adopted by the meeting. President, Dr. T. G. Roddick; Vice-President, Dr. E. P. Lachapelle; Treasurer, Dr. J. Alex. Hutchison: Secretary, Dr. J. A. Springle. Council—Drs. F. J. Shepherd, James Perrigo, Sir William Hingston, George E. Armstrong and J. George Adami.

In view of the fact that a large number of members would be elected for the ensuing year, and it would be impossible to call together the Branch for such elections. it was moved by Dr. Gardner, seconded by Dr. G. G. Campbell, that the Council be empowered to elect such members for the present year and 1897. Carried.

SECOND PAN-AMERICAN MEDICAL CONGRESS, HELD IN THE CITY OF MEXICO, NOV. 16TH TO 19TH, 1896.

INTRODUCTORY ADDRESS BY DR. M. CARMONA Y VALLE, PRESIDENT OF THE CONGRESS.

At the end of the fourth century after the discovery of America by that great man called Christopher Columbus, the idea was suggested to our neighbour, the great Anglo-American Republic, of celebrating that anniversary, among other ways, by the meeting of a Medical Congress in which all the nations existing on this continent and on the adjacent islands would take their part.

This happy thought was realized, and on September 5, 6, 7 and 8, 1893, we met in the city of Washington. The meeting was a perfect success, whether we consider the number of physicians attending, the importance of the papers that were read, or the magnificence with which we were all received and treated by that great nation and by its prominent men, who to their great talents add an extreme courtesy and a perfectly refined taste. We, who had the good fortune to take part in that first Pan-American Congress, can never forget either the affectionate reception that was given us, the great courtesy with which those gentlemen treated us, or the sumptuous entertainments with which they diversified our stay in that beautiful country. In remembrance of such an agreeable time, I can not do less than assume to myself the representation of the other American nations, and repeat to our northern neighbours, "Thanks, friends ; a thousand thanks." We will know how to reciprocate, if not with such opulence, certainly with the same entire sincerity in our own affections.

At the time of closing that great scientific meeting it was arranged that another Pan-American Congress should meet three years after. It was decided that the meeting place should be the capital of my beloved country.

This, gentlemen, is the reason of this meeting. Do you wish to know why I have been selected to occupy this place and to have the honour of addressing you to-day ? I would inform you that I owe this honour purely and simply to my age ; because there are numberless persons who have a better right than myself to such a position, and who would have filled it with great success. But let this be how it will, it now becomes my duty to extend the most cordial welcome to all our illustrious guests ; to express my hopes that they will have an agreeable visit to our beautiful country, and that on their return to their homes they may not find anything but reasons to congratulate themselves for having come. I very well know that on leaving their *lares* and *penates* they must always feel something of an indefinite melancholy, but I also know, because I myself have experienced it, that this melancholy feeling disappears as soon as they find that instead of meeting foreigners and strangers, as was to be expected, they find themselves in the midst of brethren who receive them with open arms and treat them with the effusion of a sincere friendship. You are welcome therefore, my esteemed friends, and you can be certain that in each one of us you will find a brother ready to help you in everything you may desire.

But I must go a little further, gentlemen, and under pretext of making a presentation, I must give you a little knowledge of our scientific antecedents, and lay before you our medical education. But to be able to do so, I have to bring to your remembrance certain data of our history, and rectify certain reproaches, that are often passionately thrown out to Spain, our mother country.

It is often said that the Spaniards attempted to keep us submerged in ignorance with the object of facilitating their domination. Gentlemen, such imputations are really calumnious, and unworthy of the always grateful and well constituted heart of a good Mexican. During the war of independence, we were loyal enemies; but in times of peace we are her grateful sons.

Let us remember, gentlemen, that on the 13th of August, 1521, the imperial city of Mexico fell into the hands of the conquerors under the leadership of Hernan Cortés. Eight years after that event the College of San Juan de Letrau was founded in Mexico, dedicated to the preparation for the clerical and legal professions, which were those in vogue at the time.

Let us detain ourselves for a moment and ask: what other conquering Nation, but the noble and chivalrous Spain, would have thought of founding colleges in such an extensive and newly conquered country? Would it not have been more natural at that time to have thought of sending forward troops, of increasing the means of defence, and of taking advantage of the abundant wealth of the magnificent soil? And after all, for whom was this college intended? It is not probable that it should have been for the Spaniards, because we can not conceive that any great number of Spanish families could have come to the New World, before the lapse of eight years after the conquest. It is more natural to suppose that the immigrants of that nation would be well grown men capable of defending themselves, and would not find much use for any college. On the other hand, the mixed race could not in the course of eight years have become very numerous, and would be too young to require the foundation of any school of secondary education. We must therefore come to the conclusion that this college was founded with the object of educating and developing the intelligence of the aboriginal Indian races.

But there is more yet; the first Viceroy of New Spain, Don Antonio de Mendoza, in the years 1534 and 1535, that is to say, 13 or 14 years after the conquest, petitioned the King to allow the founding of a University in Mexico, and feeling certain that this petition would be granted sooner or later, he ordered certain classes to be given which would later on be opened with the sanction of law in that institution. Unfortunately these negotiations were at that time subject to long and wearisome steps, and the distance between ourselves and the mother country was so long and the means of communication so difficult that Don Antonio de Mendoza could not realize his plan; but the second Viceroy, Don Luis de Velasco, when he came in 1551, brought with him, amongst other things, the commission to found the university, and that institution was legally established in 1553.

Subsequently, in the year 1573, the colleges of San Gregorio and San Ildefonso were founded. In 1587 that of Santiago Tlaitelolco was founded, and later on the College of Saints and the Clerical Seminary. Well now, seeing that during this short space of time seven colleges were founded in the City of Mexico, for superior education, can we still say that the mother country attempted to keep us submerged in ignorance. Far from this: the education in Mexico during the sixteenth and seventeenth centuries was of such a character that it merited the name of the Athens of the New World; and by way of results it produced such men as Ruiz de Alarcon and such women as Sor Juana Inez de la Cruz.

Gentlemen: Every age has its own ideas and its manners of appreciating them. During the sixteenth century, not only in Spain, but in the whole of Europe, the careers open to nobles were those of arms, the church and the forum. The career of medicine was at that time considered very low, and surgery was thought to have something ignoble about it. For this reason perhaps the University of Mexico established with a certain pomp its theological, canonical and forensic classes, without taking the medical science into account, up to the year 1578. In that year the chair of medicine was founded, called the "*prima*," or morning class, this being the first chair of that science which was founded in the new world. There was only one sole professor, and he taught the complete course of medicine in four years whilst the practice was acquired by the side of some well reputed practitioner. The candidates to this career were required to study Latin, the course of Arts and Astrology, or Mathematics, so that from the moment when the medical career was established in Mexico, the candidates were required to undergo a more or less complete course of preparatory study, and to obtain the degree of Bachelor of Arts.

In spite of the slight importance that was in those times accorded to the study of medicine, it was very soon seen that one professor was not enough for the teaching of this science, and in the year 1599 a second chair of medicine was founded in the university, which was called "*vesperas*," this being the second class of medicine given in New Spain. In the year 1661, the chairs of *Metodus medendi* and of anatomy and surgery were created, to which, later on, the class of dissection was added.

The professor of *prima* studied the healthy man, physiology, and probably hygiene. The professor of *vesperas*, or afternoon class, studied the sick man, pathology, medical by preference. The professor of *Metodus medendi* taught the treatment of the sick ; therapeutics, materia medica and pharmacy ; and lastly, the professor of anatomy taught dissection and surgery, described the elements that constituted the human body, taught the practice of operations, and probably also entered somewhat on surgical pathology.

The first professors were appointed by the viceroys, but they were subsequently appointed by competitive examinations. There were two classes of lecturers ; incumbents and provisional lecturers. The former gave the lectures as long as they lived and were able to do so, and when they died their places were filled by competitive examinations. The temporary lecturer served four years, after which time an examination was called for. Should an incumbent professor become superannuated, an examination was called for, but the professor who obtained the position entered with a provisional character and was changed every four years. The new incumbent was never appointed until the former one died.

Medicine was studied in a four-year course, besides those that might be employed in the preparatory studies. Once the course was terminated, the student could obtain the degree of Bachelor of Medicine, and when he perfected his practice and increased his knowledge, he could, after passing a fresh university examination, obtain the degree of licentiate and subsequently that of Doctor in Medicine.

The ecclesiastical and forensic studies could be completed in the university or in any other of the colleges I have already spoken of : that of San Juan de Letran, San Gregorio, San Ildefonso and the seminary, although all the degrees were given in the university, but the medical studies could only be followed in the last institution. Nevertheless, a decree was issued in 1768 for the creation of a Royal College of Surgeons, in imitation of a similar organization that then existed in Cadiz and of another in Barcelona. The institution was opened to study in the year 1769, but the official opening was only held in the following year.

There were four chairs founded in this college: first, anatomy and dissection; second, physiology; third, operations; and fourth, clinical surgery with elements of medical jurisprudence. In this college the Romancist surgeons studied; so called to distinguish them from the Latin surgeons who studied in the university. From thence also came the phlebotomists, the dentists, the bone-setters, the midwives, etc.

The surgeons who studied in this school were called Romancists, because when the institution was founded no preparatory studies were demanded for matriculation, from whence arose a certain contempt, due as much to the title of surgeon which was there obtained as to their want of solid instruction, in view of the absence of preparatory education. Nevertheless, in the year 1793 orders were given that the matriculation in this school should require the previous study of Latin, an order which was not carried into effect until the year 1803.

This was the condition of things when in 1821 we obtained our independence from the Mother Country. The university continued under the same conditions and the Royal College of Surgeons changed its name to that of National Surgery. In the year 1830 a great step in advance was taken, when orders were given that nobody should be admitted to the School of Surgery who did not previously prove his degree of Bachelor of Philosophy. At that time even the Latin surgeons of the university were obliged to follow the courses of the School of Surgery, the by-laws of which had been amended. In the year 1831 another step was taken. Before this time physicians' diplomas were issued, as well as of Latin and Romancist surgeons, and from that time the faculty was ordered to only issue the diploma of physician and surgeon, thus putting an end to the division in the profession and obliging the candidates to undergo an examination in medicine and surgery.

The year 1833 arrived and with it came great events in connection with public education. Orders were given for the closing of the university, and a general board of education was organized, creating several new educational establishments of a superior class, amongst which was a school of medical science, which is the one that interests us for the moment, as we may call it the germ of our present School of Medicine. In this institution the following classes were established: Anatomy, Physiology and Hygiene, Medical Pathology, Surgical Pathology, Materia Medica, Medical Clinics, Surgical Clinics, Operations and Obstetrics, Medical Jurisprudence, and lastly Pharmacy. The government appointed the ten professors, and from amongst them one who should be the director. On the 5th of December of that year this institution was inaugurated in the building in the Betlemitas Alley and at once entered on its labours.

The institution had not been opened a month when at the end of 1834 an entire political change came over our country, and consequently the university was ordered to be opened afresh and things went back to the state they were in before the 23d of October, 1833. Fortunately for the new-born school, orders were given to the university to make an inspection of this institution and present a detailed report of its present condition. For the sake of truth, we must confess that the university acted with the greatest impartiality, and its report was so favourable to the Institution of Medical Science that it was decided to keep up that school.

It would be too long to enumerate all the vicissitudes and difficulties that were suffered by this corporation, but we can easily imagine them when we bear in mind the frequent changes of our governments; the total want of pecuniary resources; the want of a proper locality for the classes and the necessary cabinets; the many enemies, some of them powerful, against whom it had to struggle in order to establish a system of teaching that abandoned the old style, etc.

When we consider all this, we can no longer wonder that in the midst of such squalls, this frail vessel should have been on the point of sinking on two or three occasions, and that its classes should have been temporarily closed at such times. The heroic founders of our school found themselves more than once obliged to resign their positions, seeing that although they gave their lectures gratuitously, and that they shared between them the necessary expenses of the institution—in spite of that, I say, they suffered rude treatment from the government, or they were deprived of the building they had occupied and were turned into the street. The self-denial of these men was such that every one of them deserves the erection of a statue and the engraving of his name in letters of gold in our school.

Although very slowly, nevertheless the improvements were continued. In August, 1835, the director proposed certain improvements of which the principal were as follows: (1) That a professor of obstetrics should be appointed and this class separated from that of operations; (2) that eleven substitute professors should be appointed, one for each incumbent; (3) that thereafter all appointments of substitutes should be made by competitive examination; (4) that pharmacists should be obliged to take the course in the institute, of botany, chemistry and pharmacy; (5) that no student should be allowed to matriculate without having the title of Bachelor of Philosophy; (6) that after the lapse of five years, no student should be allowed to matriculate in the school, unless he had taken the courses in Latin and logic, first and second course of mathematics, physics and experimental chemistry; (7) that the physicians should be required to go through a four-year course, and pharmacists a two and a half year course.

All the above amendments were accepted and the greater part of them went into effect little by little, but the difficulties that the institution encountered were so many and serious that the results could in no way correspond to the ambition of the founders.

With the year 1836 the school commenced a period of comparative calm, because, although it continued its struggle with the scant pecuniary resources and the want of a proper locality, the persecutions at least decreased and the governments now began to try and assist the institution. At the end of that year certain reforms were established, of which the principal was that of assigning a course of five years for the medical career, and the others were amendments to the regulations. As a general rule we can say that every fresh administration introduced more or less change into the regulations of public education, but they all left untouched the fundamental part of the studies which were carried on in the school of medical science. Amongst the reforms which were decreed in the year 1842, there was one that merits attention, because with that the name of the school was changed, and instead of being the "Institution of Medical Science" it has since been called "The National School of Medicine."

When I entered that school in the year 1849, it occupied a part of the College of San Juan de Letran, after having held its meetings in Betlemitas, in the Espiritu Santo. in the College of S. Ildefonso and sometimes in the professors private houses for want of any public building in which to meet. But at the time I now refer to, I repeat that the school existed in the College of San Juan de Letran, and for the sake of truth we must confess that as guests we were fairly lodged, as we had good high rooms and some of them of sufficient size to contain the magnificent cabinets of physics and chemistry which the institution then possessed.

The requirements for matriculation were either a diploma of

Bachelor of Philosophy, or at the least certificates of having studied French, English, two years of Latin, and the two first years of philosophy, but with this difference, that those who like myself found themselves in the first case, that is to say with a bachelor's diploma, were matriculated to take what was called the sixth's year's course of preparatory studies, botany, physics and experimental chemistry, whilst those who had only taken the second year class of philosophy were matriculated into the fifth year, for the study of botany and physics, and in the following year only took the class of chemistry. Once the six-year preparatory course was concluded, we commenced on the five years of medical study, which were distributed as follows: First year, anatomy and pharmacy; second year, a repetition of anatomy and a course of physiology; with first year of surgical clinics; the third, surgical pathology, operations, bandages and apparata, together with first year of medical clinics; fourth year, materia medica and therapeutics, medical pathology and second year of surgical clinics; fifth year, obstetrics, medical jurisprudence, second year of medical clinics.

During my student's career, great events happened which are worthy of being related, because they show the misfortunes that frequently overtook the school and the magnanimity and liberality of our professors. In the year 1850 the director was informed that a part of the building of San Hipölite could be purchased which then belonged to the municipality, and that the school of medicine could there be located definitely. The necessary negotiations were entered into, and the professors having agreed to yield $50,000 out of their overdue salaries with the object of paying for the building, the deed of conveyance was prepared and the school took possession of its house. The necessary arrangements and repairs were made, and in the following year of 1851 we entered into our new home. With the greatest satisfaction we remained there for that year and for the year 1852: but when least we expected it, in the year 1853, a peremptory order came from the government to disoccupy the building, as it was required for a barracks. It was in vain that we protested that the building was the property of the school and that it was beginning to be adapted to its object. Nothing could avert the blow and we were obliged to make up our minds to search for a lodging in some other place, and eventually went to the College of San Ildefonso in the character of guests, where we passed the examination at the end of the year. Having reached the year 1854, which was the last of my studies, we commenced our classes in January; but hardly had a month passed over our heads when the rector of that college, through his secretary, and without taking any notice of our own director, commenced to subject us to certain measures that we considered offensive to ourselves and to our professors, for which reason we decided to abandon that institution, but offering our own director that we would subscribe amongst ourselves to pay the rent of a house in which we would contiune our studies. Fortunately for us, our director just then obtained information that a part of the building of the ex-inquisition, which belonged to the seminary, could be purchased in the same way as the building in San Hipölito had been purchased. Our professors, who were always generous and free-handed, this time ceded $50,280 of their unpaid salaries, and in that way we acquired the ownership of the building, which has from that date been occupied by our school. I can therefore say that at the conclusion of my student's career the peregrinations of our beloved school also came to an end, and that I was one of the first to receive the diploma of physician and surgeon in that building

From that date the School of Medicine has progressed more or less rapidly to its high position. It is true that even then the salaries of the professors were paid with great irregularity ; but, to say the least, the minor expenses of the institution were covered, and a small fee was required for each matriculation and for the partial examinations. The general examinations used to cost us a little over $70, and the examiners had some participation in all these revenues, whilst the other part was dedicated to the funds of the establisment. I remember that I myself got the advantage of some of these perquisites when I was a substitute professor, but all these disappeared with the law of the 2nd December, 1857, from which date the salaries of the professors have been properly paid, with very rare exceptions. The scientific instruction continued improving with great rapidity. I have already said that the Institution of Medical Science was created in the year 1833, with ten professors, who divided amongst themselves the whole of the classes ; and that a little later on the classes of operations and obstetrics were separated, from which date the professors were eleven in number. In this way things continued until the year 1866, when the obstetrical clinic was established. The law of the 2nd December, 1867, created the classes of topographical anatomy, general pathology and hygiene. The law which is now in force. and which was enacted on the 6th of May, 1869, made no alteration in the number of classes ; but a little later on the class of normal histology was opened. So that in less than one decade five new classes were established.

We now come, gentlemen, to the present period—I mean to the period under the administration of General Diaz. I have had much hesitation as to the manner in which I ought to treat this part of our history, and my pen has hesitated a good deal, because I have found it difficult to see my way in continuing my story. Am I going to wound the modesty for which our chief magistrate is proverbial? Do I expose myself to be taken for a mean adulator? But at the same time, how can I keep silence with respect to public facts? How can I seek to hide that which is perfectly well known to all Mexicans? I shall therefore confine myself to the dictates of my own heart, begging in the first place the permission of our president, and on the other hand, assuring everybody who does not know me that I never say what I do not feel. Experience on the one hand, and history on the other, have taught us how difficult it is to unite in one and the same person the character of a consummate warrior with that of an able statesman and politician. The rare exceptions that are found are considered as phenomenal, and they constitute a real era in the history of nations. But, gentlemen, it is necessary to confess that General Diaz is one of those rare exceptions. He is as brave in the field of battle, when it has been necessary to punish him who has dared to stain the name of Mexico, or him who has dared to disturb the public peace, as he is an able statesman and a courteous gentleman, and always has been, during the long periods of peace that he himself has provided for the country. He has as perfect a knowledge of the sharp and concise language to manage soldiers as of the soft and gallant language that is necessary to deal with ladies in the parlours of the highest society. With the same facility does he treat political personages with reserve and prudence that he displays during moments of good humour that are proper for private friends. We who have had opportunities of dealing with him in matters of more or less importance have always been astonished at the special talent that he has for understanding at first sight the difficult point of any problem, and for coming to the most prudent decision on the subject: and this even when treating of scientific questions, or of matters of which he has no knowledge.

Very seldom has he found any necessity of postponing a resolution in order to give himself time to investigate or meditate on any question.

Endowed with these rare qualities, and with an extraordinarily keen intelligence, nobody will wonder that the School of Medicine should have progressed during his administration as it never could during the first forty-four years of its existence. At the time when it was founded, it may be said to have had eleven classes, and from the year 1833 up to 1877 only five chairs were added, while from

1877 to this date ten professors have been added to the school without counting a large number of assistants, prosectors and chiefs of clinics , and all of a new creation.

Both the President and his learned Minister of Public Education being convinced that a great number of students can not be attended to by one professor, they duplicated the number of those who teach medical and surgical clinics, as well as those of medical and surgical pathology. They did not consider it desirable that the male and female students of obstetrics should attend the same class, and therefore created a new chair for the exclusive teaching of midwives. In view of the absolute necessity of teaching pathological anatomy, a special professor was appointed to this new chair. And lastly, in view of the constant advancement of science in our days, which renders it difficult for any one man to possess, even to a fair degree, all the knowledge now accumulated by medical science, four chairs were established of special subjects—that is to say, of Bacteriology, Ophthalmology, Gynæcology and Pædiatrics.

In order to give an exact idea of the present condition of medical teaching in Mexico, I would inform you that nobody is admitted to the study of that science who does prove that he has passed a successful examination in his five year course of preparatory studies, which are composed of the following subjects : First and second year of Mathematics ; first and second year of French : first and second year of English ; first and second year of Latin, Spanish, Figure and Landscape Drawing, Physics, Kosmography, Chemistry, Greek roots, Universal and National Geography, Botany, Zoology, Logic, Morality, Universal and National History and Literature. The medical courses must be taken in another five years, and consist of the following studies : Descriptive Anatomy and Dissection, Normal Histology, Elements of Pharmacy, Physiology, Surgical Pathology (two years), Medical Pathology (two years), Topographical Anatomy, Operations, Bandages and Apparata, Therapeutics and Materia Medica, General Pathology, Surgical Clinics (two years), Medical Clinics (two years), Medical Jurisprudence, Hygiene and Medical Meteorology, Obstetrics, Anatomy and Pathology, Bacteriology, Ophthalmological Clinics, Gynæcological Clinics and Clinics of Infantile Diseases.

You have now before you a picture of the present condition of our School of Medicine. Study it with some care and you will be convinced that without possessing the resources of some of our neighbours, but having men of the high character of our founders, and governors such as we now have, we have no reason to blush for our school, when compared with the best organized European schools.

Gentlemen, I should be very sorry to abuse your kindness, but I have considered myself in duty bound to present our medical institution to our visitors, as it was and as it now exists. I still have to point out to your consideration certain medical questions of interest in the present day, and that merit a careful study in our Congresses. I shall try to do so in a very concise manner, seeing that men of such practical scientific knowledge as I now have before me do not require me to enter into any great detail.

The whole world will support me in saying that with the recent bacteriological studies, science has taken an enormous step in advance ; but these same studies have produced such a commotion in the old nosological knowledge that we now have a condition of real anarchy in the classification of diseases, many of which are considered, as microbian, before science has demonstrated the fact. Besides this, many of them which were formerly consider inflammatory are now excluded from that group, and placed amongst the microbian diseases, and through this fact alone they are classified amongst the general diseases. It is now time for us to undertake a scientific classification of all these complaints, founding our work on certain general principles, which I take the liberty of pointing out.

The first is, that we must either suppress from the nosological classification the idea of phlegmasia or inflammation, or if we admit that symptom, ycu must agree that this process, that is commonly of a microbian character, can be caused by very varied organisms ; thus showing that every disease which shows symptoms of phlegmasia can be considered as inflammatory, whether the generating germ is called *staphylococcus albus, micrococcus tenuis, staphylcoccus pyogenes, streptococcus, pneumococcus, gonococcus,* etc., and whatever might be the organ in which this micro-organism is developed.

The second consideration that we must not lose sight of is the following : there are microbian diseases in which the microbe appears to be a fundamental part of the evil, as in the case of leprosy and tuberculosis, whilst in others the microbe takes a secondary place and its ptomains take the first, as for instance in tetanus, diphtheria, etc.

And lastly, we must not forget that however numerous may be the diseases of a strictly microbian character, there are many others which only have that appearance and perhaps some analogy, but that as long as science does not fully prove the existence of the germ, they must not be reputed as such ; in spite of the fact that the greater part of the pathological writers so consider them. I refer to rabies, syphilis, small-pox, measles, scarlatina, etc. It appears to me better to modify our nosological classifications from time to time, and not prejudice the question by acting on analogy and popularizing or spreading errors that must always be injurious.

The second question that I would desire to see treated in our Congresses, I will present by means of a simple question. In the present condition of science, can the surgeons have a perfect certainty in their asepsis and antisepsis, so as to authorize them to undertake operations for the sake of satisfying the patients, when these operations may be of such a character that the slightest neglect or accident may endanger the life of the patient operated on ?

And lastly, I would point out an abuse that has gradually introduced itself, and with respect to which I would call the attention of the profession in general, and especially my colleagues who form the section on therapeutics. I refer, gentlemen, to the progressive and fabulous increase of the so-called patent medicines. Little by little, our drug stores are being transformed into simple warehouses for medicines already prepared ; and in some foreign towns, I have seen with the greatest wonder that it is very rare to see any prescription made up of any of the physicians practising in the locality, thus completely setting on one side the pharmacists, who are converted into ordinary merchants, without any responsibility whatever for the goods they furnish. This practice can lend itself to the greatest abuses and lead to the most unfortunate results, that would be very difficult to remedy. A prescription that is made up in a known drug store and by an intelligent pharmacist constitutes a guarantee for both the physician and the patient ; not only because the scientific reputation of the pharmacist requires that the substances employed should be perfectly pure, but also because it affords a certainty that the dosification and manipulation of the medicine has been properly done. The method of procedure leaves us perfectly satisfied, and in case of an accident, it is easy to discover whether the fault lies with the physician or the pharmacist ; but when the patent medicines are employed, many of which come to us from abroad, all guarantee disappears. Indeed, how could we possibly make those manufacturers responsible ? How could we demonstrate to them that the altered or badly prepared medicine had come out of their factories, or that some falsification had been committed ?

But there is more yet : I maintain that the use of prepared patent medicines is a practice entirely contrary to science. Because in fact, just as it is an undeniable truth that disease does not exist but that patients do ; that the morbid types are only found in the books, and that what we see in practice are individuals who modify the clinical symptoms by reason of their age, sex, constitution, idosyncrasies and medium in which they live; in the same manner it must happen that no specific medicine can exist for such diseases as anæmia, tuberculosis, dyspepsia, etc.; but that the medicines must vary just as the patient varies, and the former must be adapted to the requirements of the latter.

Let the patent medicines be abandoned to the vulgar herd, and to those who will not call in a physician; but the latter, if he is a man of learning and knows his profession, must first of all form a complete diagnosis, and afterwards, bringing into action all his knowledge in materia medica and therapeutics, he should prescribe the patient a medicine that would be in perfect accordance with the special indications presented by the symptoms. To proceed in any other manner could only be likened to a bad tailor, who insisted on dressing his customers with ready-made clothes.

Gentlemen, I bring my long and ill-arranged discourse to an end, expressing a desire that all my co-professors may have an agreeable stay in Mexico, and that their labours may attain the most complete success, and also that our subsequent meeting may further enrich the science of medicine and increase the high reputation of science in America.

THE

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BRITISH MEDICAL ASSOCIATION.

MONTREAL MEETING.

Not only is the Local Branch in Montreal busy organising the meeting next August, but the leaders of the Association in London are actively at work. The *Journal*, of December 5th, may indeed be called a Canadian number. It contains a very full article on Montreal, its medical institutions, the ways of reaching Canada and the proposed excursions, as well as excellent papers by Dr. G. E. Armstrong (Upon Operative Interference in Typhoid Perforation); Drs. Wyatt Johnston and D. D. McTaggart (Upon the Serum Reaction in Typhoid Fever), and Drs. C. F. Martin and G. H. Mathewson (Upon the Relationships Between Leuchæmia and Pseudo-Leuchæmia); all these are contributions of the highest order. We only wish that the *Journal* had given the opportunity to a larger number of Canadians to contribute. As it is, we learn that these articles were contributed at little more than a moment's notice. The success of this number leads us to suggest that in future the *British Medical Journal* would do well to bring out a series of Colonial numbers each year: Canadian, Australian, Indian, and so on,—and thereby would help to familiarise those at home and throughout the Empire, with the quality of the work done in the colonies, and with the leading workers in various parts of the world.

In addition to this we learn that the authorities in London have addressed circulars and forms of application for membership to the nearest Local Branch, to every practitioner in Canada, inviting membership in that Branch. If there are any who have not received these applications, the Local Branches at Montreal (2204 St. Catherine street); at Toronto (Dr. W. B. Thistle, McCaul street); at Halifax (Dr. G. C. Jones, 136 Hollis street); at Victoria, B.C., (Dr. G. L. Milne), and at Ottawa (Dr. C. P. Dewar), will be glad to forward all information and forms of application.

During the month two new branches have been formed, one at Toronto, with Dr. I. H. Cameron as President, Dr. W. J. Wilson, Vice-President, Dr. Machell, Hon.-Treasurer, Dr. W. B. Thistle, Hon.-Secretary, and with the following members of Council: Drs. Allan Baines, John Caven, Chas. Sheard, A. McPhedran, R. A. Reeve.

Drs. Wilson, Baines, Caven, are presidents of the Medical, Clinical, and Pathological Societies of Toronto, respectively. With so active and influential a list of officers, it is evident that Toronto is joining most cordially in the attempt to make the meeting a success.

The other branch was established at Ottawa on the 15th inst., and we heartily congratulate our confrères at Ottawa for the enthusiasm they displayed in thus uniting together. Dr. Roddick, President-Elect, was present, and addressed about 40 out of 50 practitioners in the city, and of these over 30 applied for membership. Dr. C. R. Church was elected President, Dr. L. C. Prévost, Vice-President, Dr. W. C. Cousens, Hon.-Treasurer, Dr. C. P. Dewar, Hon.-Secretary and the Council of five, includes the well-known names of Sir James Grant, Dr. H. P. Wright, Dr. W. R. Bell, Dr. A. J. Horsey and P. A. MacDougall.

At the annual meeting of the Montreal branch thirty-one new members were added, and in the ten days that have elapsed since then, close upon forty further applications for membership have been received by the Secretaries in Montreal.

We may again point out that members may be transferred from the Montreal and other local branches to other branches which may be formed in their neighbourhood during the ensuing few months. It is in all respects advisable that members belong to the branch in their immediate neighbourhood. By a resolution passed at the last meeting of the Montreal branch, it was determined that the subscription, including the delivery of the Journal, should be reduced to $5.25 for all members living outside Montreal and suburbs.

That the Montreal City Council is most anxious to render help, is evidenced by the fact, that $3,000 to this end, has been inserted among the items of the loan for which the City seeks authorization in the Quebec Legislature. The Mayor and other leading members of the City Council of Montreal, have throughout shown themselves most anxious to forward the interests of the Association and deserve the hearty thanks of the profession for their endeavours on our behalf.

Among the local entertainments to be given to the members of the Association and its guests at the meeting, will be the excursion to Ste. Agathe and Montagne Tremblante in the lovely country 50 miles north of Montreal, an afternoon excursion down the river in one of the finest boats of the Ottawa River Navigation Company, a similar excursion to Ste. Anne and down the Lachine Rapids, and an entertainment upon the Mountain. These will be given by thelocal branch. It is as yet too early to make any statement with regard to private acts of hospitality.

The Museum, devoted to the exhibition of foods, apparatus, medical preparations, books, and everything of special interest to physicians, promises to be an important feature of the meeting. The Museum Committee are authorized to spend $1,000 in fitting up and arranging the Victoria Skating Rink, the largest and most convenient building which could be obtained for this purpose, and the exhibition will be made attractive to the general public as well as to the profession.

Already leading manufacturers of medical specialties both in England and in the States, are making active enquiries about the Museum, which promises to assume an international character, the leading firms in England and France desiring to introduce their goods into America; the American firms being anxious to familiarize the visiting members of the Association with the qualities of American products. There will thus be much competition shown and the exhibition promises to be a remarkable one.

ON INTERPROVINCIAL REGISTRATION.

In the Montreal *Gazette*, of December 11th, was printed a leading article written, we are informed upon good authority, by a layman, and headed, "A Great Opportunity." This article so fully expresses our own opinions upon the matter, and withal is written in so vigorous a style, that we venture to reproduce it.

"The annual meeting of the British Medical Association in Montreal is for many reasons an important occasion. The mere sending out of the programmes will draw attention all the world over to the attractions of Canada for tourist travel, and the advent of so many visitors is certain to make widely known the material resources and the industrial and social advancement of the Dominion. These are facts which it is to Canada's advantage to have known in the Old Country, and there is no class better fitted to spread that knowledge than the medical profession who are constantly brought into friendly relations with all classes of the population. But there is another advantage likely to accrue from the meeting of no less moment. It will give an impetus to medical education and research all over the Dominion, and will bring the doctors here into touch with the profession in the Old Country. It will also show the most influential members of the profession in the United Kingdom what a high standard of medical education has been reached here, and that our institutions will not suffer by comparison with those on the other side of the Atlantic. But to take full advantage of this opportunity, it is necessary that an important step should be taken in the interim. The Canadian Medical Association will meet at Montreal on August 28th and 30th, immediately before the British Medical Association meetings, and the scheme of interprovincial registration, which was referred to the provincial council at the last annual meeting, will come up for discussion, and, it is to be hoped, for final adoption. The medical profession in Canada have had this subject under discussion for many years, and it is quite time that it should be finally dealt with. The present condition of affairs is anomalous and vexatious. A doctor on one side of the Ottawa River cannot attend cases on the other, and Montreal specialists are prevented from being called in to consult on cases in Ontario. Even in the matter of legal evidence, opposing counsel may prevent a doctor from being heard because he has not the provincial qualification. All this is very absurd, and a serious injury to the public, which has a right to the best medical attendance procurable in the Dominion, wherever patient or doctor may happen to reside. The present arrangement is also a great disadvantage to medical students, who do not always know where they will find their best opportunity to practice, and are, therefore, compelled, as a matter of precaution, to take two or three provincial qualifications, thereby needlessly increasing the fees and the examinations. Another unfortunate result is that no Canadian qualification is recognized by the Medical Council of Great Britain as giving a right to practice in the Old Country, and Canadian diplomas are not regarded with the esteem they deserve. The McGill and Bishop's courses are accepted as a sufficient guarantee for the preliminary work, but the Canadian graduate has still to do some months' studying in England and take the final examinations before he can obtain an English qualification. In Australia, where the various colonies have a common standard of examination, the graduates have obtained the right of registration in England on merely presenting their diplomas. Medical education in Canada is quite as far advanced : but the General Medical Council of Great Britain say, reasonably enough, "We cannot be expected to enquire into the various qualifications that obtain in the different Provinces of the Dominion; adopt a common interprovincial standard, and we will gladly admit you to registration." At the meeting of the British Medical Association in Montreal next August there will be an unparalleled opportunity for advancing in this direction, if the scheme of interprovincial registration now before the provincial boards is adopted in the meantime. The British Medical Association takes cognizance of all matters of interest to the profession, and after seeing our system of medical education, the equipment of our institutions, and the men who administer them, it might very properly pass a resolution recommending the Medical Council in England to admit Canadian practitioners to registration in the Old Country on presentation of their diplomas. Such a recommendation could hardly fail of its effect, for the leading members of the Medical Council are also leading members of the Association, which is thoroughly representative of the profession in the United Kingdom. But in order to gain this valuable privilege, it is absolutely necessary that there should be a common standard of examination throughout the Dominion. So long as the various provinces refuse to accept each other's qualifications, one can hardly expect the British Medical Council to accept any of them."

There are in this article one or two points that require possibly some little explanation. We believe for example, that the reason why the authorities in England permit Australian practitioners to register, is not that there is a common standard of medical education throughout the Australian Colonies, but because those Colonies have up to the present time remained separate and are not confederate. If, as is not outside the range of possibility, the Australian Colonies unite, then according to the present British law they will lose their privilege unless they establish some scheme of inter-provincial registration. But as the matter stands at present undoubtedly the Australian graduate can register in Great Britain, and can in consequence practice over a large portion of the empire, and the Canadian cannot, until some common scheme of licensing is agreed upon by the Provinces of the Dominion.

We are glad to learn from the pages of our esteemed contemporary, L'Union Medicale, that in the Province of Quebec the report of the inter-provincial reciprocity of the Canadian Medical Association has already been brought before the Provincial Board of Medicine of Quebec, and that a committee composed of Drs. D. Marcil, A. T. Brosseau, J. M. Beausoleil, E. E. Laurent and C. S. Parke have reported to the Board in favour of adopting the scheme put forward· This Committee asks that the officers of the Council be authorized to sign a preliminary treaty with the other provincial Boards of the Dominion, and with that of Prince Edward Island, so as to be able to give a special license conferring the right to practice throughout British North America.

As the British Medical Journal remarks in another able leading article, it is fitting that the sixtieth anniversary of the Queen's accession be celebrated in the profession by an act which indicates the imperial unity of our profession, namely: this Montreal meeting of the British Medical Association. The members of the profession in Canada can, it seems to us, celebrate the great occasion in no more memorable way than in drawing together and, by accepting interprovincial registration, gaining great and imperial opportunities.

MEDICAL CLUBS AND FRIENDLY SOCIETIES.

We have received from Dr. Belleau, the Secretary of the College of Physicians and Surgeons of the Province of Quebec, the following timely resolutions on a subject which has from time to time been attracting a good deal of attention from the medical profession, namely, the abuse of the club system.

We have also received from California a set of resolutions which have been passed by a number of physicians there, dealing with the same question. These we publish under another heading.

[TRANSLATION.]

PROVINCIAL BOARD OF MEDICINE.

Extract of the minutes of the Provincial Board of Medicine, held at Quebec, 12th September, 1895, in the new rooms of the School of Medicine of Laval University.

Proposed by Dr. S. Gauthier, seconded by Dr. Beausoleil, and resolved, "That a committee composed of the members of the Legislature, together with the proposer and seconder, be authorized to study the rules and constitution of the several friendly societies doing business in the Province of Quebec, and that it be resolved that this Committee take means to do away with the despotic rules that these associations, calling themselves philanthropical, impose upon the medical profession.

"That the College of Physicians and Surgeons of the Province of Quebec express their disapproval of the conduct of members of this College who make engagements with these societies to attend the members of the lodges for a salary agreed upon in advance.

"That it is derogatory to professional honour and ethics to be bound in all cases to make known the name, the cause and the nature of the sickness of the members of these associations.

"That this Committee confer with the several managements of these associations of mutual help, so as to cause the withdrawal from their constitutions of the clauses requiring the doctors to certify, even under oath, the causes of the demands for benefits, from their members.

"These obligations being a cause of crying abuse in a great number of cases, at the same time that they expose the medical profession to popular discredit.

True Copy.

Signed, A. G. BELLEAU,
Secy. C. M. & C. P. Q.

Extract from the minutes of the Semi-Annual Meeting of the College of the Province of Quebec, held in the rooms of Laval University, at Montreal, the 2nd July, 1896.

Dr. S. Gauthier, Secretary of the Committee on Legislation made the following report:

"REPORT OF THE COMMITTEE ON LEGISLATION.

"Seeing that the College of Physicians and Surgeons of the Province of Quebec is of right the protector of the interests of the medical profession, it is urgently required to take into its serious consideration the resolutions of its committee on Legislation, held at Montreal, the 10th June, 1896.

"This Committee resolved that it was of absolute necessity to protect the members of the College of Physicians and Surgeons of the Province of Quebec against the injury done to the medical profession by these friendly societies doing business in the Province of Quebec.

"The rules of these associations which impose on physicians prices fixed in advance for their services, are supremely ridiculous and should be annulled. The Committee on Legislation demands also from the College of Physicians and Surgeons that it declare that the conduct of physicians who subscribe to the rules of these several friendly societies is derogatory to professional honour, and that by so doing they render themselves amenable to the discipline of the Council.

"The interests of the medical profession require that the members of these several associations shall remain at liberty in the matter of the choice of a doctor, and that these friendly societies should be satisfied with the certificate of any physician duly qualified by the College of Physicians and Surgeons.

"It is derogatory to the honour and ethics of the profession that a physician become a member of the board of directors of any of these associations, or permit himself to exercise control (either by visiting the patients of their confreres or revising their certificates) or to influence the *clientele* of a whole district.

In effect we are aware that certificates of physicians unconnected with these societies, certificates that require the specification of the cause and of the nature of the illness, pass into the hands of physicians who accept a miserable pittance for doing the medical practice of the lodges, and are subject to commentaries more or less malicious.

"This position is no longer tenable, and the respectable portion of the profession of medicine is not disposed to any further put up with such indignities.

"If the friendly societies, which are certainly called upon to do good, are willing to understand their own interests, let them cause the disappearance of the arbitrary clause in their rules, otherwise the medical profession will be forced to protect itself.

"There will be a general rising against these abuses. Physicians in all parts of the world where these associations exist are suffering from these monopolies.

(Signed,) N. P. CARTIER, M.D.,
J. M. BEAUSOLEIL, M.D.,
J. C. S. GAUTHIER, M.D.

This report was adopted without discussion.

True copy,
(Signed) A. G. BELLEAU,
Secy. C. M. & C. P. Q.

SEGUNDO CONGRESO MÉDICO PAN-AMERICANO.

The second Pan-American Medical Congress held in the City of Mexico on the 16th to the 19th of November proved to be in many respects a highly successful meeting. In all some 500 members of the profession registered; this number, considering the season of the year, may be considered large. Next to Mexico, the United States had, as would be expected, the greatest number of representatives.

Considering the great distance and period of the year, the representation from Canada was respectable, seven having put in an appearance, six being from Montreal and one, Dr. Rice, of Woodstock, from the Province of Ontario. The Montreal representatives were Sir William Hingston, Drs. E. P. Lachapelle, Benoit, Blackader, J Chalmers Cameron and James Stewart.

The delegates from the United States were fairly numerous, but only feebly represented the types which we meet with in the Congress of the special associations at Washington.

Dr. William Pepper, the president of the First Pan-American Medical Congress, and to whose zeal and ability the foundation of the Congress is due, was present and took an active part in the proceedings.

The formal opening of the Congress took place at the Teatro Nacional on the evening of November 16th. The proceedings were opened and closed by a few remarks from General Perfirio Diaz, the President of the Mexican Republic. He extended a warm welcome to the visiting delegates, and expressed the hope that much good would arise from the meeting together of so many kindred minds all imbued with the lofty aim of conferring benefit on their fellows.

The General Secretary of the Congress, Dr. Edwardo Liceaga, reported that 550 physicians from different parts of the Western Hemisphere had promised to be present at the Congress, and that the papers promised in the various sections amounted to fully three hundred. Dr. Liceaga concluded his able address in the following words, which were loudly cheered by the immense audience: "We have every reason to hope that the results of our meeting will be beneficial to the progress of science and will tend to alleviate the evils that afflict humanity. It is in every way a consolation to see the spectacle that is presented by such meetings as this. They make us appreciate the advances of civilization, the benefits of the association and at the same time give us a practical proof of the universal fraternity that is found in scientific studies.

"The physicians who come from the continent, from the islands, from the northern points, from tropical countries or from the distant republics of the South, all come animated with the same idea. They will separate from their discussions all questions or controversies that could touch polities or religion. Their studies and mutual instruction will not be interfered with in any way by difference of race or of language.

"Those who come from distant countries have not taken into consideration the pain of leaving their families, nor have they measured the distance that separates us from their distant lands; they have not been afraid of the dangers to be met with in their long journeys, nor have they counted up the losses incurred through the abandonment of their business, and still less are they animated by the sordid avarice that the celebrated English poet, Lord Byron, so bitterly censured in those traders who abandoned their comforts, their families and their countries, who defied the dangers of the seas and the ardent sun of the torrid zone in search of wealth without ever being able to satisfy their unlimited avarice.

"No, gentlemen, you have not been brought here by the thirst for gold; you do not sacrifice your peaceful and laborious life, nor do you abandon your homes and countries for the sake of ignoble passions. You come here to bring your contribution of knowledge and experience to the progress of medical science; you come to investigate the truth, to study the means of alleviating physical pain and to advance the improvement of human intelligence.

"Gentlemen, I can only express the hope that the fulfilment of the duties which you have freely imposed upon yourselves, and the realization of these beautiful ideas will compensate you for your sacrifices and contribute to the progress of humanity.

"Gentlemen, in the name of my country I thank you for your presence at this meeting. Gentlemen, you are welcome."

Dr. Carmona Y Valle, President of the Congress, then delivered a most interesting address on the history of medicine and medical education in Mexico from the time of Cortes to the present day. We publish this address in this number. It will well repay perusal. It makes clear the great difficulties that the profession laboured under in Mexico until very recent times, but now owing to an enlightened and progressive government, medical education there compares favourably with many of the American States.

Dr. William Pepper, of Philadelphia, followed Dr. Carmona. He delivered a very eloquent address, which was loudly applauded. He began by referring to the marked progress made by the Mexicans in recent times, politically, socially and in science. He dwelt on the more important recent bacteriological discoveries, and referred to the great importance likely to be played in modern medicine by Roentgen's discovery.

The last paper in the first general meeting was read by Senor Don José Gamboa, a prominent legal gentlemen in the City of Mexico. He chose for his subject "International Sanitary Legislation." He strongly advocated the appointment in each Capital of the Pan-American States of a committee who would have power to deal with all questions affecting, or likely to affect, the general health. In this way he claimed that uniform laws would be enforced.

Senor Gamboa's address, which was delivered in Spanish, was well received.

The next speaker was Dr. E. P. Lachapelle, the able representative of Canada. He dwelt on Bacteriology in its relation to Preventive Medicine. The address, which was delivered in French, reflected great credit on the speaker.

The general closing session of the congress was held in the Chamber of Deputies, when the official delegates of the various representative States made appropriate allusions to the success of the meeting.

In the space at our disposal it is impossible to give even a summary of the more important papers read at the various sections. The section meetings were held in the School of Mines, a building well adapted for such a purpose. In the section on Medicine a paper read by Dr. Wm. Pepper on "The use of the Roentgen Ray in Thoracic Aneurism" attracted considerable attention. Dr. Pepper exhibited a series of skiagraphs well illustrating the dilatation of the vessel. Several noteworthy papers in Spanish were read on Yellow Fever. This subject was more dealt with in the several sections, and in the general meetings than any other. A long address in English at one of the general meetings, dealing mainly with cholera and yellow fever, was listened to with great attention. The speaker, an official representative of the American Navy, appears to think that a little effort on the part of England and Spain would forever banish these two diseases from the face of the earth, a little more drainage in India and a little more cleanliness in Havana, being apparently all that is necessary to accomplish this end.

The section on general surgery was usually well attended. The papers read were considered to be fully above the average of congress meetings. The various other sections were, with the exception of that of obstetrics and hygiene, rather poorly attended. Considering the difficulties of different official languages this is not surprising. The Anglo-Americans who are acquainted with Spanish are extremely few and the Hispano-Americans who know English appear to be about as few.

Considering these difficulties the Mexican meeting must on the whole be considered a success. The great courtesies and hospitality shown to the strangers by all classes in the City of Mexico was unbounded.

The reception tendered to the members of the congress by the Mayor and City Council of the City of Mexico, in the Municipal Palace, was a most successful function. There was a grand serenade and display of fireworks on the Plaza de la Constitucion given in honour of the guests.

A bounteous supper in an artificial grotto was an event which any one who had the privilege of seeing will never forget.

The social event of the meeting however was the reception tendered in the Palace of Chapultepec by the President of the Republic and Mrs. Diaz. This took place on Thursday afternoon, and was attended by all members of the congress with their ladies, as well as by a very goodly company of the leading citizens of Mexico.

There is probably no palace or house in the world that commands a more magnificent panorama than that of Chapultepec. The hill, an isolated rock rising to a height of several hundred feet, was the first abode of the Aztecs before they built Tenochtitlan. At its base there is a magnificent grove of huge moss-draped cypress trees, dating from long before the conquest by Cortes. On the summit the castle is built, surrounded by marble paved terraces, bedecked with flowers.

The valley of Mexico, with its city, the lakes and the magnificent snow-capped volcanos, together make a picture of resplendent beauty.

THE AMERICAN GOVERNMENT AND THE CANADIAN NURSE.

" BUFFALO, N. Y., December 18.—Immigration Inspector De Barry received from Washington, last night, notice of a new ruling by the Secretary of the Treasury on the alien labour law. This ruling is on the question that was raised in this city two years ago as to whether the Canadian trained nurses who come to this country to work in hospitals, do so in violation of the law.

" The Secretary of the Treasury has ruled that these nurses can be deported. As soon as Mr. De Barry received the notice of this new ruling he started out to get lists of the Canadian nurses in the hospitals. Mr. De Barry said last night that all of these nurses would be deported. Inspector Ezell, of Ogdensburg, is now at Dansville, where he went to deport five Canadian nurses, who are employed in a Sanitarium there."

The foregoing extract from the daily papers is pitiful. It reveals a depth of meanness with which we can scarcely credit any government in our own enlightened times. According to the same authority the great de Barry has signified his gracious intention not to interfere with the Canadian nurses already graduated and at work in that land of liberty, the United States ; but HE will not allow any more to come in. Evidently the American trained nurse is getting crowded out. It looks as if the Canadians were too popular and that in order to protect home products intruders are warned off. If this view be correct it is a direct compliment to our nurses.

This method of making citizens rather smacks of the way in which Mahomet went to work. He went about with a Koran in one hand and a sword in the other and people took their choice. De Barry does not cut off their heads, that is illegal, but he deports them, threatening imprisonment and fine if they are ever seen again in the enlightened land over which wave the stars and stripes.

The whole matter looks like the child's quarrel so graphically described in the popular song a year or two ago, " You shan't play in my yard."

Obituary.

PROFESSOR NEWALL MARTIN.

Lack of space in our last number, or more truly, the large number of other obituaries, prevented us from referring to the death in mature life of one, who perhaps accomplished more to raise in America an enthusiasm for exact scientific work in the domain of medicine and physiology than any other teacher of his time. Indeed Professor Newall Martin may be regarded as the Pioneer Physiologist of America. It was given to him to be the pioneer in other things. He was the first scholar in Natural Science to be appointed in Cambridge, England, and the first resident at the Hostel, or University Boarding-house, established by one whose death we recorded last month, namely, Sir George Murray Humphry, in order to encourage active minded young fellows to enter the university. That was in the days, when the old English Universities were still regarded more as the abiding-place of the well-to-do than as centres of learning properly so-called. Humphry told many stories of his old pupil. Before he left England, by his well-known little work published in conjunction with Michael Foster, he did much to stimulate the laboratory and practical teaching of physiology. What the Johns Hopkins, and the other universities of this continent owe to him it is difficult to say ; and it is sad to think that one with such power of stimulating others should, while in the prime of life, sink rapidly and be cut off from his fellows.

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Original Communications.

THREE CASES OF PELVIC HÆMATOMA.

BY
WILLIAM GARDNER, M.D.,
Professor of Gynæcology in McGill University; Gynæcologist to the Royal Victoria Hospital; consulting Gynæcologist to the Montreal General Hospital.

THE PATHOLOGICAL REPORTS, BY C. F. MARTIN, M.D.,
Assistant Physician to the Royal Victoria Hospital; Lecturer on Pathology in McGill University.

The association of pelvic hæmatocele with cancer and tuberculosis of the genital organs of women must be exceedingly rare. In none of the recent works on gynæcology which I have examined is any mention made of it. This statement applies to the classical paper of Whitridge Williams on genital tuberculosis, the chapter on the same subject in the third edition of Pozzi's magnificent work on gynæcology just published (1897), and that of Sir William Priestley in Clifford Abbott and Playfair's system of gynæcology (1896). The same remark applies to cancer of the uterine appendages as treated in each of the works mentioned. This is certainly remarkable, especially as regards tuberculosis now known to be so frequent a disease of the tubes and ovaries, and to which so much attention has been devoted by many observers in recent years. That pelvic hæmatocele may be associated with these diseases is proved beyond a doubt by the two cases I am about to describe. They are unique in my experience. Their exact relation as regards cause and effect is not so certain. The necessary nutritive and vascular changes may have preceded or co-existed with the cancer or tuberculosis, but may not have been the result of these marked processes. What we know of these diseases as they affect other organs or structures of the human body is surely a cause for wonder that effusion of blood is not frequently caused by the much more frequent tuberculosis of the ovaries, and especially the

Fallopian tubes. By most authors and operators pelvic hæmatocele is in the enormous majority of all cases held to be due to ruptured ectopic gestation. The evidence on which this opinion is based does not always bear close scrutiny. The necessary evidence of the presence of a fœtus or chorionic villi or other decidual elements is not always to be had even when carefully sought for.

Extra-uterine Pregnancy.—Mrs. S., aged 35, was seen in consultation with her ordinary medical attendant, Dr. W. F. Hamilton. She has been married twelve years and is the mother of six children to full term. She had a miscarriage in January, 1896, for which an anæsthetic was given to remove some portion of the products of conception. In May she had regained her health and continued well till August. The last normal menstrual period occurred about the 5th of August, there was no return till the 10th of September. The discharge was then scanty and of short duration. From this time on till the time of operation on the 11th of November, there were discharges of blood at irregular short intervals, there were also paroxysms of pelvic pain, but no syncope or collapse. During the last two weeks previous to operation vomiting occurred several times, but at no time was there any elevation of temperature. When I first saw her about the middle of October, the uterus was somewhat enlarged and soft, and to its left and adherent to it there lay an elastic fixed mass; this rather rapidly increased in size during the three weeks I occasionally saw her before operation. At the time of operation there was a distinct abdominal tumour. The patient was admitted to my private hospital on the 11th of November.

Operation.—The uterus was dilated sufficiently to admit the finger to the fundus and the cavity found to be empty except for a general lining with decidual membrane; it measured five inches in depth.

Abdominal Section.—No free blood or fluid of any kind in the cavity; a livid tumour-like swelling adherent to the whole of the pelvic walls and floor, the adhesions not very dense. During the process of separation a large quantity of almost black fluid and clotted blood escaped. At the bottom of the pelvis lay the fœtus and placenta, apparently detached, but lying in the sac described; part of the wall of the sac was formed by the posterior wall of the uterus. After the removal of the fœtus and placenta the rest of the sac was easily separated and brought through the abdominal incision, when it could be as easily ligated as an ordinary empty ovarian cyst. No bleeding of any consequence followed the separation of the sac, so that the abdomen could be closed without drainage. Recovery has been absolutely uneventful.

The specimens presented, illustrate one of the most unusual varieties of ectopic gestation, and clearly show from a careful study of the relation of the parts how intimately associated may be the ovary and tube in ectopic gestation, the tube being the primary site of the event, while the ovary is to all intents and purposes purely passive.

The material was sent me by Prof. Wm. Gardner on November 11th, 1896, and on gross examination was seen to consist of four distinct portions:

1. A male fœtus 12.2 cm. long with 3 cm. of cord attached.

2. A placenta 15 x 6 x 2 cm. in dimensions with a portion of cord 10 cm. long adherent to it.

3. A containing sac of about 12 cm. in greatest diameter. Its wall was of varying thickness, densest at its outer extremity (*i.e.*, the part furthest from the uterus) where there was seen a flattened out mass of tissue of 1½ cm. in thickness, and containing a few narrow, elongated spaces filled with clear, thin fluid (probably compressed ovarian cyst). This mass was intimately associated with the rest of the wall, gradually becoming thinner at its peripheral portions where it passed imperceptibly into the rest of the wall of the sac. Microscopic sections showed abundant evidence of its ovarian nature.

Elsewhere the sac was thinner; in some places quite translucent, in others moderately dense and thick. The Fallopian tube was seen coursing for several cm. along the superior portion of the sac, and terminating abruptly in the sac itself as a sudden dilatation, evidently the site of the ectopic gestation.

The inner lining of the sac was in some parts smooth and glistening, where presumably the amnion still remained, in other parts it was rough and ragged from the presence of placental remains and blood clots, all easily detached.

Round about the sac there was evidence of some adhesions with chronic inflammatory fibrosis and local thickenings of the peritoneum.

Microscopic Sections were made through eight different portions of the sac wall, and through two portions of the overlying Fallopian tube.

In the first place, specimens were examined from the outer thick mass of tissue suspected to be ovarian, and the condition revealed was as follows: An outer layer of peritoneum with unusual proliferation of the endothelium was seen to cover tissue, undoubtedly ovarian in nature inasmuch as a graafian follicle was found. The ovary itself was, to a large extent, markedly fibroid. Advancing further inwards, in the same specimens, towards the inner wall of the sac, one could distinctly see the mucosa of the Fallopian tube with great proliferation of the epithelium and numerous fimbriæ projecting on all sides. Between the tube itself and the superimposed ovary no peritoneal coat could be found, the prolonged stretching, with its accompanying hyperplasia of connective tissue, evidently obliterating all such distinctions. The ovary then, as these sections clearly showed, was flattened out upon the sacculated tube, and helped to form a part of the wall of the sac, but its participation was obviously purely passive, and the condition cannot, by any means. be regarded as a true ovarian pregnancy.

Sections from the smoother, thinned-out portions of the sac showed no special features of interest. Those specimens, however, which included the placental remains showed the usual appearances of the villi, with the blood sinuses, decidual cells, hemorrhages and what has been regarded by Hubrecht, Webster and others, as remains of fœtal epiblast. These cells or collections of cells are massed together, their nuclei staining deeply, as in the case of all embryonic tissue, and their protoplasm absorbing a diffuse eosine stain. They occupy what seem to be indifferent sites in various portions of the placental tissue.

The case then is of interest as showing how easily one may conclude the presence of an ovarian pregnancy, a condition which has been time and again denied, and certainly never been absolutely proven. While ectopic gestation is thought by many to occur primarily not only in the tubes and the ovary, but also on the abdominal peritoneum, the question seems recently to have been more fully studied by Webster, who bases his views on a variety of different methods of examination of a large quantity of material. By means of careful dissection, examination of gross frozen sections and microscopical specimens, he was enabled to show that many cases previously regarded as abdominal or ovarian were really after all but modifications of the tubal form; cases that might under ordinary conditions have been described as truly ovarian in origin were thus shown to be after all merely one or other form of tubal pregnancy, and he is led to consider that ovarian does not exist. Hence, he classifies all ectopic gestation cases under the three simple headings of ampullar, interstitial and infundibular, our own case being included in the last of these three varieties.

It has been granted by most authorities that the ordinary uterine and tubal mucosæ play, but a very minor rôle in the occurrence of pregnancy, and that the subepithelial connective tissue is that upon which the true fertilization occurs; it is for this reason that Orth and many other European authorities still believe in the possible occurrence of an abdominal pregnancy, arguing that the peritoneum itself contains tissue quite analogous to that beneath the uterine mucous membrane.

Were there nothing further required to induce this pregnancy there would be no reason for supposing it to occur almost anywhere in the peritoneal cavity, but Webster has shown that there is good reason for believing that some special cellular action must probably occur to induce the process of fecundation. He argues that wherever pregnancy occurs a genetic decidual membrane forms, associated probably in some way with nerve influence, and he further urges that this can take place only along the parts which take their origin from the Mullerian ducts. Hence ovarian and abdominal pregnancies would be impossible, and no one has yet proved a very early ovarian pregnancy to exist.

That some nervous influence is associated with the condition would seem to be true from the discovery made by him in a case of ectopic gestation where the nonparturient tube had likewise a definite decidua upon its inner surface.

Some months ago I had occasion to examine some specimens from a case operated on by Dr. Alloway, in which there had been a double tubal hemorrhage, arousing the suspicion of a bilateral ectopic gestation. In one of the tubes I readily found villi, though in the other there was no evidence of any chorionic tissue. The case, however, is suggestive as possibly being one similar in nature to that described by Dr. Webster.

In one of the recent numbers of the *British Medical Journal* there is a synopsis of an article from Chrobak's clinic in Vienna, referring to a case of ovarian pregnancy, which, however clear, seems to be none other than an ampullar tubal pregnancy if one regards the original site of the placenta. The ovary, as in our own case, forms a portion of the sac wall, and the ligament of the ovary enters directly into the sac, but nevertheless the placenta itself is described as being fixed to the uterus.

Pelvic Hæmatoma Complicating Malignant Disease.—Mrs. J. McC., aged 39 years, entered the Royal Victoria Hospital in July, 1896, complaining of pain in the right inguinal region radiating towards the umbilicus. This pain began in January, 1896, was of a dull aching character and remained constant for seven days, during which time the bowels were rather constipated. For the first three days there was constant vomiting, and the abdomen was somewhat distended; after the pain disappeared there was tenderness in the right inguinal region for a week. Since January, 1896, she has had intermittent attacks of pain in the same region, but no vomiting unti June, when she had an attack similar to that in January, accompanied by vomiting and chilliness with constipation. Since then she has had constant pain in the right inguinal region radiating towards the umbilicus with a sensation of dragging downwards of the navel. The patient has had three children and one miscarriage, the last child three years ago; the miscarriage seven years ago. Menstruation regular, at intervals of three to four weeks, duration three days, quantity moderate, no clots. On examination the abdominal wall was lax, with a tolerably thick layer of subcutaneous fat. Striæ fairly well marked, moderate tenderness in the umbilical region. No descent of either kidney. In the hypogastrium immediately above the brim and rising quite to the level of the upper surface of the pubes is a firm, rounded, smooth and sensitive tumour. Per vaginam; the cervix is cleft bilaterally, granular and everted, the os is patulous and admits the tip of the finger. The cervix is directed to the left side of the pelvis. To the right of the cervix is a moderately firm mass partially movable and continuous with the mass felt in the hypogastrium. The sound enters three inches and is directed to the right side. There is scarcely any mobility of the uterus independent of the mass.

OPERATION, July 31st, 1896.—*Abdominal Section.*—The omentum was adherent to a pelvic mass and to the brim of the pelvis. Several coils of intestine were also very firmly adherent to the mass. These were separated by the scalpel leaving portions of the sac wall attached to the gut. The sac lay in the vesico-uterine pouch adherent, but not very intimately. It was enucleated and tied off with cat-gut; the pedicle being composed of the right ovary and tube. The left tube and ovary were also removed. During enucleation the sac was partially ruptured and black fluid blood and portions of partly decolorised clot escaped, the oozing from the vesico-uterine pouch was controlled by pressure and the thermo-cautery. No drainage. Recovery speedy and uneventful. Discharged August 26th, 1896.

The specimen from this case was sent to the Laboratory on July 31st, 1896, and was found to consist of two distinct portions: (1) a large mass of tissue to which was attached the right ovary and tube, and (2) the left normal tube with a slightly cystic left ovary.

The large mass measured 14 cm. in greatest diameter, was moderately well encapsulated, and the tube which was of normal thickness could be seen stretched out upon the surface. On section the mass was seen to consist of shreddy friable material throughout, dark brown-red in colour, evidently containing much blood pigment. The whole friable mass appeared to be loosely held together by a moderate amount of fibrous framework. The central portions presented far greater disintegration than did the peripheral. The capsule itself varied in thickness, the average being 4-6 mm.

Microscopic sections were prepared from various portions of the mass. Those taken from the capsule and peripheral portions of the tumour, show a fairly dense fibrous tissue containing abundant blood pigment in crystals and amorphous granules, and a moderate degree of small round celled infiltration. The innermost portions showed a small number of epithelial cells arranged in an irregular manner amid the fibrous framework. Sections through the more friable portions of the growth revealed a tissue consisting almost entirely of epithelium and fibrous tissue. The epithelial cells were in parts arranged as glandular structures such as are seen in a multilocular ovarian cyst, but for the most part all trace of glandular arrangement was lost, and the irregular luxuriant growth of epithelial cells amid the stroma gave all the characteristic features of an adeno-carcimona.

There was in addition abundant necrosis and a large amount of hæmatoidin. The tube was normal.

Pathological diagnosis. Adeno-carcimona of the right ovary. Cystic left ovary.

Pelvic Hæmatoma Associated with Tuberculosis of the Fallopion Tube.—Mrs. L. J., age 34 years, came to the out-patient department of the Royal Victoria Hospital on August 14th, 1896, complaining of profuse discharges of blood per vaginam, pains in lower portion of abdomen and back, and tenderness in the hypogastric and right inguinal regions. Until the present illness patient has always enjoyed good health. The family history is phthisical. She has had eight children, but no miscarriage ; labours all normal. Recoveries favourable. The last child April 11th, 1895. Menstruation was due on the 1st of July, but did not appear till the 4th, continuing till the 14th, when it ceased, and the patient began immediately to have hypogastric pain which continued till the next menstrual period. Since then she has had attacks of flooding with severe pain in the intervals. On July 30th she passed a large clot from the vagina.

Examination.—Abdominal wall tolerably fat, flabby and somewhat pendulous, striæ well marked, marked pigmentation from umbilicus to pubes. Tenderness in hypogastric, right inguinal and iliac regions. No descent of either kidney, no tumour or mass to be felt.

Per Vaginam.—Skene's glands inflamed, a purulent looking discharge can be squeezed from their orifices. Vaginal orifice torn and much relaxed, no evidence of disease of vulgo-vaginal glands. Descent of vaginal walls. Cervix bulky, thickened, firm and patulous, a bloody mucous discharge escaping. Uterus retroverted, its mobility diminished. To the right and behind the uterus an elastic, exceedingly tender, pulsating mass. The patient was admitted to the gynæcological ward of the Royal Victoria Hospital.

OPERATION, August 19th, 1896.—*Dilatation and Curetting.*.—Result moderate in quantity, endometrium roughish to the curette. Gauze packing.

Abdominal Section.—Intestines adherent to a mass in the true pelvis. After separation of some adhesions a cavity containing eight to ten ounces of black blood clot was opened and evacuated. In the floor of the pelvis lay the right ovary as large as a medium sized orange, adherent and containing a straw-coloured transparent liquid. The corresponding tube was dilated and contained a blood clot partly decolorised. Chain ligature of cat-gut and removal. The left ovary was also expanded into a cyst at least two inches in diameter. It was removed. The left tube was not removed, it was adherent but not enlarged to any extent. No drainage. Recovery speedy and satisfactory. Discharged September 8th, 1896, apparently in perfect health.

This specimen which was sent by Prof. Wm. Gardner on August 19th, 1896, consisted of a large hæmatoma—two ovaries and two tubes.

The one ovary (Rt.) was enlarged to more than twice its normal size, was mainly transformed into a bilocular cyst with generally thin walls and containing clear gelatinous fluid.

Attached to this ovary was an enormously distended and thickened tube evidently closed at both extremities. Its contents were hæmorrhagic in nature, its wall for the most part much thickened and distorted, the inner lining dotted over with fairly large tubercles and very few ragged portions of tissue. About midway, the wall was much thinned, shreddy, and showed a large irregular perforation evidently the original source of the hæmatoma of the broad ligament. The other ovary was enlarged to twice its normal size, firm, and with an apparently normal tube.

The existence of a hæmatoma associated with tuberculosis of the Fallopian tube seems to be an event of considerable infrequency inasmuch as the literature on the subject seems not to consider its occurrence at all, and yet in the very nature of tuberculous processes the occurrence of hemorrhage is to be looked for rather than otherwise. Just as the exudates of tuberculous peritonis and pleurisy are for the most part hæmorrhagic, so, too, one might expect a similar occurrence in the chronic diffuse miliary tuberculosis of the Fallopian tubes.

ON RETROPERITONEAL AND PERIRENAL LIPOMATA.

BY

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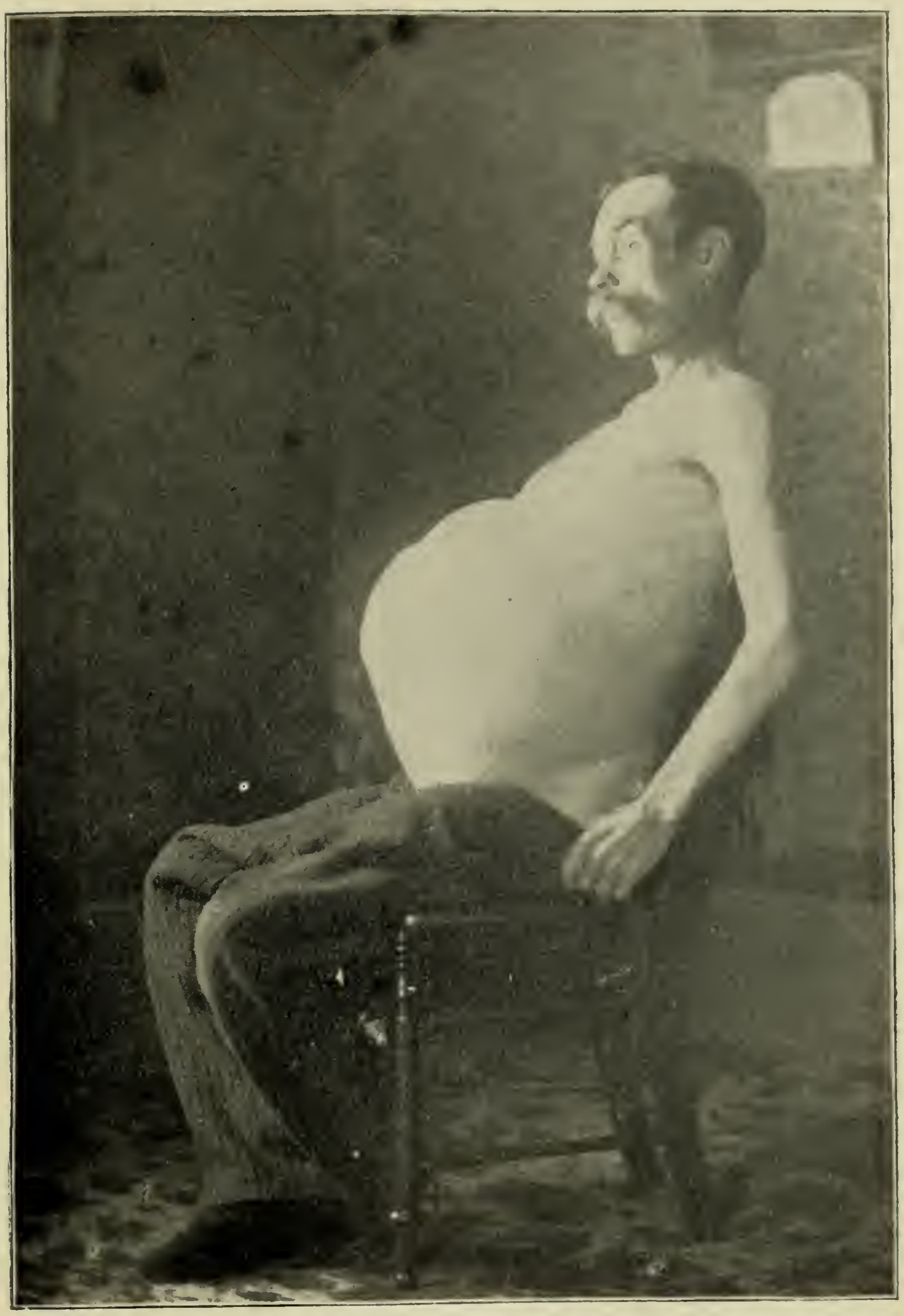
The fat which is normally present around the kidney is liable as is well known to great overgrowth when those organs are diseased, as, for instance, in cases of hydronephrosis, of renal calculus and in many forms of chronic renal disturbance; more especially when the organ has undergone atrophic change is this overgrowth apt to present itself and under these conditions it would seem to have originated as a compensatory development. To this form of hyperplasia Virchow has called special attention. There is however a condition of excessive hyperplasia leading to the development of enormous neoplasms concerning which, so far as I can find out, Virchow makes no mention in his great work on tumours; a form in which the kidneys primarily would seem to be unaffected and in which the development of new fatty tissue is so enormous that growths from 40 to 60 lbs. in weight develop in the course of a few months or, more frequently, of from one to three years.

That Virchow should make no mention of these or of retro-peritoneal lipomata in general is evidence of their rarity, indeed after a careful study of the literature of the subject I have been unable to collect descriptions either complete or partial of more than about twenty-four cases; nor again have I come across any general article on the subject in our language. Nevertheless where the condition is present the clinical histories and the appearances found at the autopsy present so uniform a character and one so clearly marked off in many respects from other abdominal overgrowths that it is well worth while to collate what has been written upon the subject and to indicate the special points which characterise this form of tumour. My attention has been more especially called to the subject from the fact that within a few weeks two very well marked cases of this condition came under my notice. For the history of one of these cases together with the tumour I am indebted to Dr. Hanna, of Perth, Ont.; for the history and notes in connection with the other I have to express my sincere gratitude to Dr. Billings, Dr. Lamb, and the authorities of the Army Medical Museum at Washington. This last case I am informed has never been fully recorded and is of especial interest to me in that in almost every point it is identical with the former.

It will be well before discussing the subject as a whole to give as briefly and as clearly as possible the facts in connection with these two cases.

Dr. Hanna's patient was John McK., aged 45 years at the time of death, by trade a harness maker. His mother had died of cancer at the age of 50. The father was still alive in 1893, aged 75, a brother and a sister were living and healthy. He had been strong and in excellent health until January, 1892, when he noticed that he was growing rather stout in the abdomen, while at the same time other parts of the body were becoming emaciated. There were no other symptoms: he ate well, slept well and felt well, and not until March of that year did he consider his condition sufficiently unsatisfactory to make it necessary for him to consult his local physician, who prescribed diuretics. The abdominal swelling continued to increase steadily and with it the emaciation, so that in April he came to Dr. Hanna who found the general condition of the patient good in every particular save for the presence of a large tense abdomen revealing fluctuation from side to side, more enlarged to the left; the girth at the level of the umbilicus was 37 inches. Aspiration yielded not a drop of fluid, hence a diagnosis of abdominal tumour was made and the patient was persuaded to enter the Montreal General Hospital. There Dr. Shepherd (to whom I am indebted for the accompanying illustration) made an exploratory incision on May 2nd, 1892, and found a solid uniform growth occupying the whole abdominal cavity. The relations of the tumour were found to be such that it was decided not to venture upon removal. The patient recovered well from the operation and in a fortnight returned home. From the date of his return until his death on February 9th, 1893, Dr. Hanna saw him at intervals of a fortnight. The course was one of continual growth of the tumour and steady emaciation of body, without throughout a single moment of pain or failure of appetite; the bowels and kidneys never failed to perform their functions. In October the measurement at the level of the umbilicus had increased to 47 inches, and in the middle of this month his physician noticed an apparent softening about the size of a saucer in the umbilical region, aspirated and drew off nine pints of sweet pus. From this date aspiration was practised every week or ten days, and in all close upon 60 pints were removed. Six weeks before death the patient presented slight signs of septicæmia and from this time onwards the pus aspirated was extremely offensive, while towards the end slight anasarca of the legs up to the knees manifested itself. The patient became weaker and weaker, respiration was impeded and he died on February 9th, 1893. To the



very end there was absence of pain and of any disturbance in the bowels or kidneys.

The necropsy on the following day revealed no disturbance of other regions, save great emaciation of face, extremities and chest and slight œdema of the lower lobes of the lungs. Upon opening the abdomen the bowels were found to be behind and to the right side of the tumour, with the exception of the descending colon which was stretched over the growth and which during life could be felt passing across towards the right side and the front of the tumour. This was covered by the expanded mesentery and peritoneum. There were a few slight attachments which were readily removed by the finger, and the tumour came away readily. With it came the left kidney and the spleen. The former was firmly adherent to and, in fact, imbedded in the growth, its lower extremity was atrophied by pressure and flattened, the ureter passed down along the back of the tumour to the bladder and was pervious ; the spleen was partially imbedded in the tumour but not deeply, and it came away with comparative ease ; the right kidney was healthy and unaffected : the liver had been pressed upwards and its measurement from above downwards was diminished. On section it presented the normal appearance. There was a loose adhesion of the pancreas to the growth.

The tumour when it reached me the next morning weighed 41 lbs., and that, after three pints or more of pus had been removed. Taking this into account together with the loss of fluid during transit, 44 or 45 lbs. would seem to have been the weight at the time of the necropsy. The kidney and a portion of the colon were still adherent, and the tumour presented a coarsely lobate appearance, the lobes being bound down and covered by several irregular and thin layers of fibrous tissue. Upon cutting into the tumour well-marked bands of connective tissue could be seen passing between the large lobes, which varied in size from that of a man's fist to that of a man's head ; upon the upper and anterior surface were three or four lenticular lobes that appeared to be composed exclusively of fatty tissue and were completely cut off from the main mass by loose connective tissue ; these in fact were capable of being moved to a slight extent over the surface of the rest of the growth. Within the lower and anterior portion of the tumour was a large cavity of which the front wall had fallen in. This still contained grayish-green pus and the tissue around was extensively broken down, of greenish colour, with here and there thrombosed vessels and patches of old hæmorrhage which had assumed a dark green tinge.

Sections from various regions showed that the tumour was in the main composed of pure and typical fatty tissue. In many parts this was undergoing a mucoid change or degeneration; in some the fat had almost wholly disappeared or had more properly degenerated, the characteristic myxomatous cells being very well seen. On the surface where the growth appeared to be advancing, this appearance was wanting, hence I am inclined to regard the more mucoid regions as tending to be degenerated, and not, as one author to be presently cited would hold it to be, the primary condition. Well-marked connective tissue as a rule separated the fatty lobes, but in one region near the lower end of the tumour and not far removed from the abscess cavity an oat-shaped cell growth replaced well-formed connective tissue, so that sections from this area presented a markedly sarcomatous appearance. There was no cartilage or deposit of calcareous salts or osseous development present.

Here, then we are dealing with a huge retroperitoneal lipoma, which by some would, from its tendency to undergo mucoid degeneration be termed a lipoma myxomatodes, and which in parts would almost seem to have taken on more marked sarcomatous characteristics. I am inclined to consider, however, that the rapid cell growth referred to was largely due to the neighbouring inflammatory disturbance, although in some parts of the sections the sarcomatous appearance was so typical that the case may well be cited as one of chronic inflammation in a loose connective tissue resulting in overgrowth of embryonic tissue, that is to say leading to malignancy.

The Army Medical Museum at Washington received the material connected with the second case from Dr. W. W. Brown, of Brooklyn, who supplied the following details:

J. McN., aged 60, had been a temperate hard working man enjoying always good health. A tumour was first noticed in February, 1869, and then was about the size and shape of an ostrich egg, somewhat movable and painless. During the next two years it increased steadily in size, without, however, affecting the general health of the patient. Although latterly the liver became compressed upwards by the enormous size of the tumour, there was no dyspnœa. As an indication of his general condition it may be added that the patient was a regular attendant at church up to a fortnight before his death. Three weeks before death he walked a long distance to attend the funeral of a friend; the day was stormy and he caught a cold, which increasing in severity led to death from exhaustion in February, 1871.

The autopsy, performed by Dr. G. E. Smith, of Brooklyn, revealed the following conditions: the anterior abdominal wall was infiltrated with and distended by serum, the muscles being atrophied. A tumour weighing 41.5 lbs., of irregular flattened shape was everywhere adherent to the wall. The liver and intestines were pushed well upwards diminishing the thoracic cavity. The stomach was compressed and adherent to the diaphragm by old adhesions, the right kidney contained one large and some smaller cysts, the left kidney was atrophied and flattened by the tumour to which it was adherent and in which it was partly imbedded. It contained a cyst the size of a walnut upon its convex border. These kidneys together with portions of the tumour and the plaster cast form specimens 8533 to 8536 in the Army Medical Museum. The casts shows above the descending colon passed over the growth.

Examined microscopically the tumour was found to consist "largely of adipose tissue in a voluminous stroma of embryonic connective tissue with abundant nuclei between the fat cells."

It is seen that both these cases present a similar history, of long duration and slow growth, accompanied by very little general disturbance. There is the same history of lack of pain and of disturbance of the general functions of the body till towards the last few days of life. Along with this lack of active disturbance of functions it is noticeable that both patients became extremely emaciated. In both the tumour consists of fatty tissue in which is imbedded a kidney showing little change beyond what would seem to be mainly the results of pressure of the tumour, both are retro-peritoneal and over both there passes a length of the large intestine.

(To be continued.)

WHEN SYMPTOMS ARE ABSENT.[1]

BY

THOMAS JAMESON, M.D., Rochester, N.Y.

We cannot take up any medical journal, but we find papers by able writers, on almost every subject, connected, in even the remotest way, with medicine and surgery: but very often the essays, however ably written, do not affect the treatment we give in our cases, for often we have forgotten the subject matter of an essay, before a case, occurring in our own practice, brings the points forcibly to our minds; for one case, under our own care, teaches us more than reading about 100 similar cases.

Therefore to-night I simply want to relate a few cases, that have come under my own observation, in which we shall see serious traumatic and pathological lesions have occurred, without the threatening symptoms which most text books lead us to think must occur, in order to have the lesions present. The reason for this is obvious; there is a strong tendency for one writer to quote an older one as an authority, and often errors are in this way perpetuated in medicine, as they are in law, by looking for precedent.

We are accustomed to think that as soon as a perforation of the intestine occurs, in typhoid for instance, that immediately we have severe abdominal pain which develops in the right iliac fossa and rapidly spreads over the whole abdomen. Profound collapse; the latter evidenced by feeble running pulse, cold sweat, and subnormal temperature, feeble respiration, great thirst, suppression of urine and frequent vomiting. Now these symptoms, as we know, do occur: that from autopsies I have seen I have reason to believe that they do not set in until from 6 to 12 hours after the rupture, and that the symptoms are then due, not primarily to the rupture, but to the resulting peritonitis. There is no symptom which is, of itself, evidence of a perforation of the intestines, either traumatic or pathological. Rupture of any of the internal viscera is not necessarily accompanied by severe symptoms immediately; nor even in severe accidents do we at once get evidence of damage done. Hence, how often do we read in the daily papers, as the opinion of some doctor in an accident case, that a patient will recover, " unless he has been injured internally." Warren, in his text-book on " Surgical Pathology and Therapeutics," refers to this under the head of insidious shock, in which he says: "The person, though seriously injured, congratulates himself upon having made an excellent escape, and imagines that he is not only in no danger, but will soon be about again."

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[1] Read before the Rochester Pathological Society, December 17, 1896.

"The countenance, in this form of shock, has often a peculiarly melancholy expression, as if foreshadowing the fatal event; a sad smile plays upon the lips, and illumines the lower part of the face, while the upper part wears a gloomy aspect, in striking contrast to the other. It seems in such cases, that there had been an attempt at reaction, which had failed. The cheek may be flushed slightly, and the skin be dry and warm, but the pulse, although strong, is easily compressed, and it is evident to the careful observer that the patient's condition is most critical. He may greet you with a cheerful "Good morning, Doctor," and when asked how he feels, will respond, "fine," and yet the fatal end may come only a few hours later."

The following case will illustrate the point.

On October 27, 1894, I was hurriedly called to see a young man, aged 17, who had accidentally shot himself with a 22-calibre Flobert rifle. He was shooting rats in the rear of the house, and in some way discharged his rifle while it was pointing towards him. The gun was nothing more than a toy, being what boys commonly use, and his father, who came for me, thought that his son had only received a slight flesh wound. The patient, after his injury, walked from the yard up one flight of stairs to his bed, and when I saw him, I found the following condition. A ragged, bruised tear, extending longitudinally along the left side of the penis; a small oblique wound in the left groin, about half an inch above Poupart's ligament; one inch nearer to the symphysis pubis than to the anterior superior spine of ilium.

The patient was a muscular young man, and did not consider himself seriously hurt, his pulse was full, strong, and regular, and beat about 72 to the minute. He said he felt no pain whatever, his colour was good, nor was there any anxiety expressed on his countenance. There was no bleeding from the wound, and my impression at the time, judging from his condition, and the history of the case, was that we had probably a mere flesh wound, but, on running my probe into the bullet hole, I found that it entered the abdominal cavity. I advised immediate laparotomy and took the boy at once in a hack to the City Hospital. About an hour elapsed before everything was in readiness for an exploratory incision, and even when put upon the table, the patient was in good condition. I made an incision about 3 inches long, extending upward from the wound, and on opening the peritoneal cavity, a sudden gush of bright red blood showed injury to a large vessel. After some delay, owing to the extent of the hæmorrhage, I succeeded in securing the artery, which was a branch of the inferior mesenteric. On carefully drawing out the intestines, I found eleven distinct holes, allowing fæcal contents to escape. These punctures bled profusely but were rapidly sewed up, with the assistance of some of the gentlemen present here this evening. One piece of ileum was so badly lacerated that I performed a resection, removing over three inches of the gut, and putting in a Murphy button. I now thought I had discovered all the injuries, but there being some evidence of further hæmorrhage, I enlarged the incision in an upward direction, and discovered a tear, about four inches long, which separated the descending colon from the meso-colon. This laceration being sewn up, and all apparent hæmorrhage stopped, the peritoneal cavity was very carefully cleansed and the wound closed. The patient never rallied, and died four hours after the operation, and about seven hours from the time of the accident. A partial autopsy being allowed, and feeling sure there was further hæmorrhage, I found, in addition to the injuries already described, that the bullet had buried itself in the spleen, from which there had been free bleeding, which burrowed down in the cellular tissue, toward the left kidney.

When we consider the extent of these injuries, it hardly seems possible that the patient had such slight symptoms, even an hour after his injuries.

A few weeks previous to the case just related, an Italian was shot in a saloon on West Avenue, the bullet entering the belly. He was removed to the City Hospital, but as he did not exhibit any signs of internal hæmorrhage, or of perforation, the attending surgeons thought it best to wait for symptoms calling for interference. About 36 hours after entering the hospital, he began to have symptoms of peritonitis. A laparotomy was then undertaken, and several punctures found, which were carefully sewn up, but the patient died of general peritonitis. Might he not possibly have been saved if an immediate operation had been done?

On the evening of May 9th, 1894, Dr. E. W. Mulligan sent me to make a call for him. I found a boy, aged 12 years, suffering with a bearing down pain over the bladder, and making ineffectual attempts to urinate. His parents said that he had complained of some pain for five or six days, but was not so bad as to interfere with his play, and they did not consider it necessary to send for a physician, but as he had not urinated all that day, they thought it time to have a doctor "draw his water," as they expressed it. On examining the boy, I discovered an ovoid tumour, extending almost up to the umbilicus. On gentle percussion, it gave an absolutely flat sound. The belly was somewhat tender, but not markedly so. As I did not have a catheter with me, and the boy was very uneasy, I gave him a hypodermic injection of morphine, and went back to my office for a catheter. When I returned to the house. his mother told me that there was no need to pass a catheter as he had urinated some and felt all right; but on looking in the vessel I saw he had only passed a couple of drachms of urine. Feeling positive there was more urine than that in the bladder I examined the abdomen again, but was surprised to find that the tumour had entirely disappeared. I then passed a small soft rubber catheter, but succeeded in getting only a few drops of urine. The boy was very comfortable, did not complain of pain, but was tender all over the belly and had a temperature of 103°. Feeling sure the bladder had ruptured, I sent for Dr. Mulligan, and he saw the case about midnight. He urged immediate laparotomy, and took the child in his carriage to the City Hospital, made a median incision and found the abdomen full of fluid. The doctor discovered a small tear at the apex of thebladder which extended into the peritoneal cavity. He sewed the tear up and in washing out the peritoneal cavity found a gangrenous appendix, which he removed and the patient made a good recovery.

Here was a boy then with appendicitis, running around playing, suffering with a reflex retention of urine, subsequently having a spontaneous rupture of the bladder, with but little discomfort, and no symptoms of shock.

One Friday evening in January, 1895, a young man, a personal friend of mine, came into the office, complaining of pain in his right side. On examination I found there was slight tenderness over McBurney's point; no rise in temperature, nor in the rate of the pulse. As he was constipated, I ordered a purgative, told him to go home to bed and not to get up in the morning unless he felt better. On seeing him next morning, his bowels had not moved. He was uneasy but not suffering much pain; temperature and pulse normal. Ordering a large dose of castor oil and hot stupes, I left. When I saw him that afternoon, he was sitting up in bed reading the paper. His bowels had moved, and he felt quite comfortable, saying he was just waiting for my consent to get up and go skating; but I noticed his eyes were slightly jaundiced, and that his temperature had risen to 101° with a slightly more rapid pulse. The tenderness over McBurney's point was better, except on deep pressure and there was no rigidity of the muscles of abdomen. I had difficulty in persuading him to allow me to have counsel, as he did not consider himself sick. Dr. Mulligan saw the case with me later in the afternoon and advised an operation, but as the family had always employed a homeopath, we called in their family physician, Dr. Adams. The doctor could not satisfy himself that the patient had appendicitis at all, but gave his consent to an exploratory incision. The patient was removed to the City Hospital that evening and I made an incision, and found a large tense appendix covered with inflammatory lymph, and apparently ready to rupture at the apex. I removed it, the patient making a rapid recovery, and is at present in the best of health.

Now here is a case that had progressed that far in twenty-four hours, with but little pain and no alarming symptoms.

A short time previous to this case, I was called one Monday night to see a young lawyer in the absence of his own physician. Before entering the room, the patient's wife met me, and said that her husband was very nervous, and often imagined he had appendicitis, whenever he had pain in the abdomen. I found the patient suffering apparently from colic. He had no tenderness ; his abdominal muscles were lax ; his temperature and pulse were normal, and most of his pain was in the region of the transverse colon. Taking the history of the case into consideration, I did not think he was sick, and told the family so, ordered a laxative, leaving an anodyne to relieve his pain, and advising them to call in their own physician if he was not better in the morning. On the following Thursday his own physician operated on him, and found purulent peritonitis, resulting from a ruptured appendix, from which the patient died.

These cases convey their own lessons. They teach that we may find serious conditions in the abdominal cavity, demanding immediate operative interference, if we would save life, without classical symptoms.

Dr. L. McLane Tiffany, in the American Journal of the Medical Sciences, reports four cases of wounds of the peritonal cavity, and thinks the following propositions are justified :

" First.—A penetrating wound of the peritoneal cavity is not accompanied by symptoms commensurate with the extent of the injury.

Second.—Many fatal lesions may be present, and yet give rise to no marked symptoms.

Third.—Fatal lesions may exist, and yet shock be wanting.

Fourth.—The wound of entrance should be enlarged, and if the missile has entered the abdomen, a section is called for.

Fifth.—Operation is proper soon after the injury, before the peritoneum has become infected, or much blood lost."

In suspected peritoneal sepsis from any cause, the presence of a slight degree of jaundice is often a valuable danger signal, not to be ignored, but we must avoid placing too much reliance on the presence or absence of any symptom, but try to take a mental picture of each case on its own merits, supplementing symptoms with a careful physical examination.

Before closing, I wish briefly to call attention to another form of abdominal disease, from which its insidiousness, is, I am sure, often overlooked. I refer to tubercular peritonitis, which, one writer has said, can simulate anything from an ovarion tumour to pregnancy.

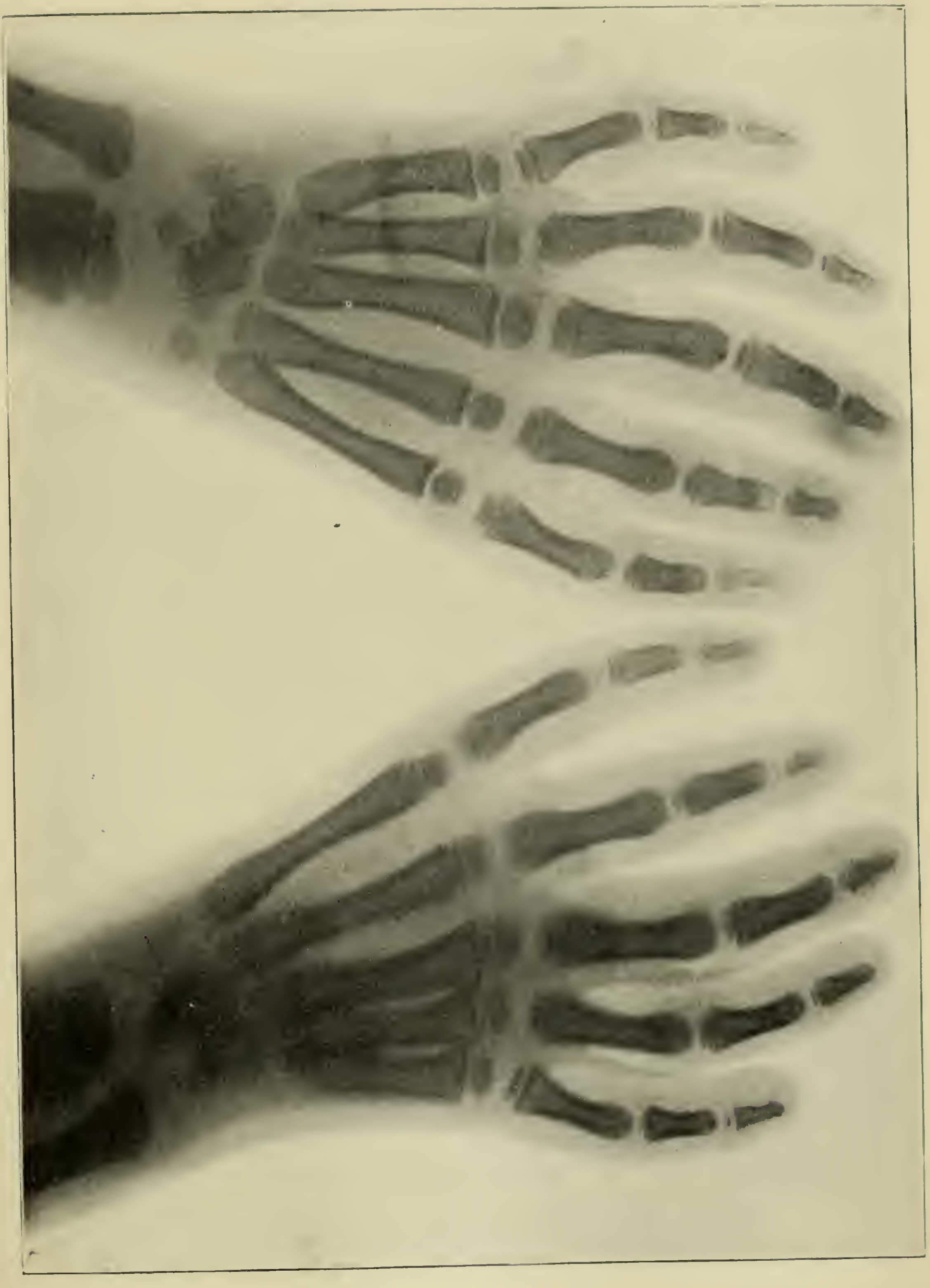
The following two cases occurring in my own practice will illustrate what I mean :

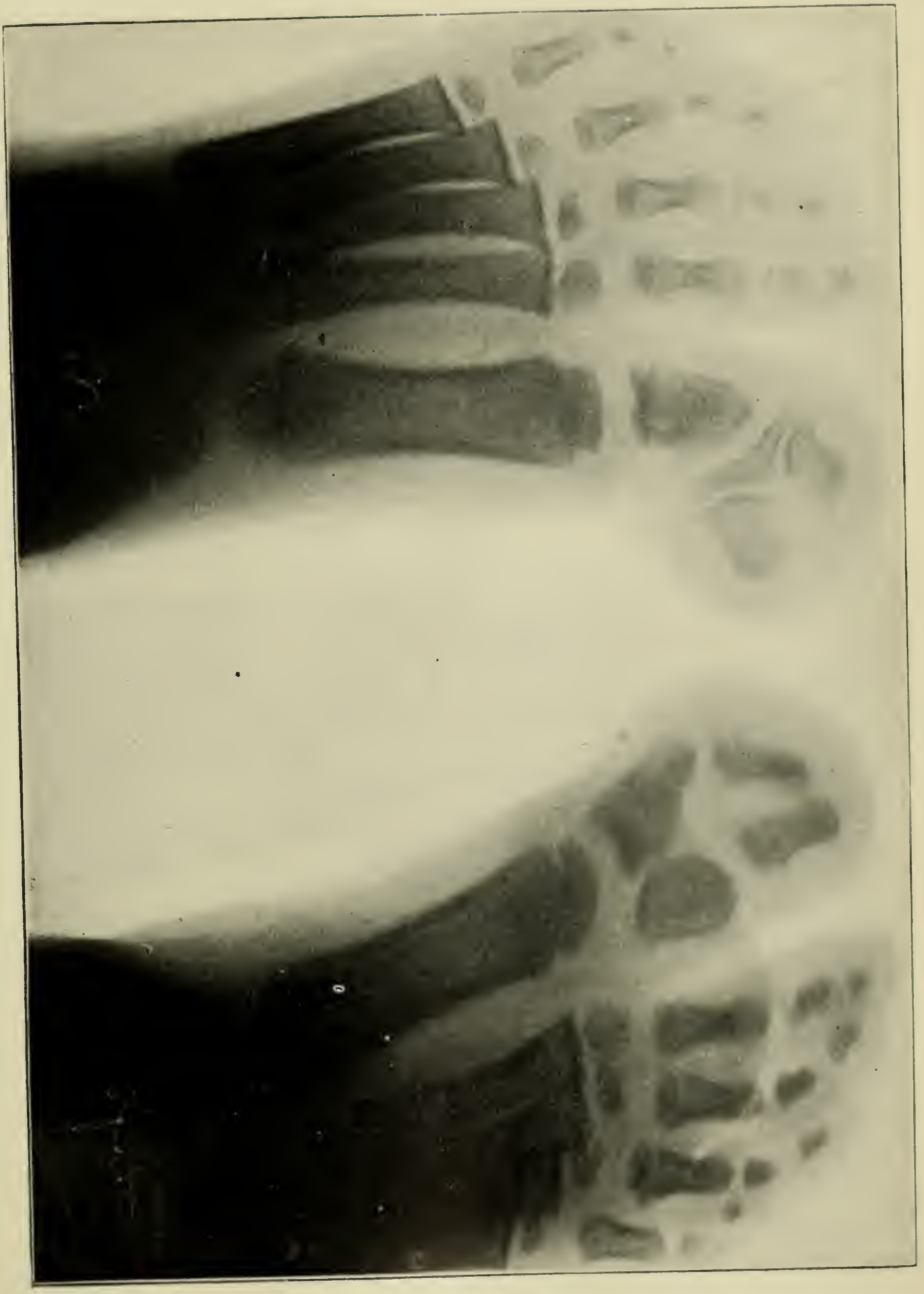
Last May, I was called to see a girl in a neighbouring village, who had been suffering for the past year from a slowly progressing enlargement of the abdomen. She had not menstruated for three months ; had no nausea or vomiting ; no pain ; appetite fair ; bowels regular ; temperature and pulse normal. After a careful physical examination of the abdomen, I diagnosed the case as one of ovarian tumour, and advised laparotomy. She came to the City Hospital and was apparently in very good condition, but on examining the lungs, I detected a small amount of fluid in the left pleural cavity, which I aspirated. This led me to change my diagnosis from ovarian tumour to that of probable tubercular peritonitis. Opening the abdomen a day or two later, I found the cavity full of serum, and the whole peritoneum studded with tubercles. The Fallopian tubes were very much thickened, and the ovaries somewhat disorganized. Nothing was removed. A glass drain was put in for twenty-four hours. The patient made a good recovery, and has apparently been greatly benefitted by the section. She has gained in weight and in strength, and her menstrual functions have returned.

The second case is of a similar nature.

A young girl, aged 22, came into my office complaining of a feeling of weight in the pit of the stomach after eating, and of indefinite pains in her side. She had consulted a physician in Pennsylvania, who told her she had gastric catarrh, and that her slight cough came from her stomach. The patient gave a history of slight loss of weight, and of general weakness. Having the previous case in my mind, I examined her very carefully, and found a small amount of fluid in the right pleural cavity, but could find no further evidence of lung trouble. On palpating the abdomen, I thought I detected fluid and advised exploratory incision, asking her to see Dr. W. B. Jones to get his opinion. Dr. Jones agreed with me, so I operated a few days later, and found a condition as bad, if not worse, than the previous case. Mere drainage was followed by the same happy results, the patient apparently fully regaining her health.

If such results can be obtained in even these late cases, if it were possible to diagnose these cases earlier, might we not expect even a better and perhaps more permanent recovery ?





MALFORMATION OF THE HANDS AND FEET.

BY

A. E. GARROW, M.D.,

Assistant Demonstrator of Surgery and Clinical Surgery, McGill University ; Assistant Surgeon Royal Victoria Hospital.

E. P., male, aged 7, applied at the Out-door Department of the Royal Victoria Hospital, complaining of severe pain in both big toes when wearing boots.

With the exception of his hands and feet, he is a well developed boy for his age.

The accompanying skiagraphs kindly taken by Professor Callandar show the deformity beautifully.

The deformity of the hands is symmetrical, they are spatula shaped, the thumbs being replaced by fingers, having three phalanges, and articulating with a long metacarpal bone.

The interphalangeal joints of the first two digits, on the radial side, show marked limitation of movement on closing the fist, the first finger passing beneath the second to a slight extent.

In picking up small objects he employs the first and third fingers, ignoring the second altogether, but on using a spoon he puts the first two fingers on the upper part of the handle, the others beneath.

The feet are also symmetrically deformed, showing the condition of polydactylism and syndactylism, the big toes are permanently adducted, and in wearing boots gives him considerable pain.

The skiagraph, shows that the first metatarsal bone articulates with two distinct phalanges, and each of the latter with two distinct terminal phalanges, the latter in the left foot evidently being developed from a single epiphysis.

Clinically these two are inseparably united, a plantar and a dorsal groove indicating the line of attachment, there being only, one broad, slightly furrowed nail.

The child's suffering was relieved by amputating the terminal phalanges of both big toes.

PRESENCE OF TUBERCLE BACILLI IN FÆCES FROM A NON-TUBERCULOUS INTESTINE.[1]

(From the Medical Clinic of the Royal Victoria Hospital.)

BY

R. B. SHAW, M.D.,

Resident Physician, Royal Victoria Hospital.

The subjoined report is made in view of the following interesting conditions:

1. The presence of tubercle bacilli in the fæcal matter of a non-tuberculous intestine.
2. A pernicious type of anæmia incident to senile tuberculosis.
3. The association of meningeal hæmorrhage and grave secondary anæmia.
4. The existence without symptoms of a psammoma.
5. The presence of an auricular endocarditis.

The patient was a man aet. 54, a mechanic by trade who entered the medical wards of the Royal Victoria Hospital on June 8th, 1896, *complaining* of persistent diarrhœa and general weakness.

He was born in Scotland and came to Canada when 20 years of age. Of his *past history* he was unable to give a very satisfactory account and apart from some indefinite statements about his having had "fever and ague" while in Cuba some four or five years ago, there was nothing of importance. He had been of moderate habits and gave no history of venereal disease.

The *family history* was negative.

Present illness. Late in the fall of 1894, the patient had a severe chill lasting about five minutes and he subsequently suffered so much from general weakness that he was obliged to give up work. Diarrhœa supervened and a week later he entered the Montreal General Hospital where he remained about one month and was then discharged feeling restored. Within a very short time afterwards the diarrhœa returned and has persisted ever since. He had suffered too for the last year or more from general weakness, and entered the Moore Convalescent Home in April 1896, walking about daily until the diarrhœa and weakness became so severe as to necessitate recumbency. So far as he knew no blood had ever been passed in the stools, which had been more or less liquid for the past six months. His appetite had been steadily failing but there was no vomiting. He had observed for the past six months that he was rapidly losing flesh but had never suffered from cough though from time to time slight expectoration was present.

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[1] Read before the Montreal Medico-Chirurgical Society, Nov. 20, 1896.

Present condition. The patient is a much emaciated and markedly anæmic-looking man of good intelligence. His skin has a somewhat subicteroid hue but the sclerotics are of a bluish tinge. He sleeps well and has no pain but his appetite is very poor and he is so weak that he is able to sit up in bed only a few minutes at a time. He has no cough, though from time to time he expectorates a small amount of greenish muco-purulent sputum. Temperature 97$\frac{2}{5}$°. Pulse 88. Respirations 20.

Lymphatic glands. The glands of the groin are somewhat enlarged and indurated but the other superficial lymphatic glands are normal.

Blood. Red blood corpuscles, 670,000; leucocytes, 6,000; hæmoglobin, 11%.

Locomotor system. The muscles are wasted. The bones and joints are in good condition. There is a ganglion about the size of a large bean in connection with the tendon of the left extensor longus pollicis and another more than twice as large with that of the right flexor carpi radialis.

Nervous system. Mental state is good as a rule but at times the patient is somewhat delirious. His memory is distinctly impaired.

The *motor* and *sensory functions* and the *reflexes,* superficial, deep and organic, are all normal.

Special senses. The fundus of the left eye, as examined by Dr. Martin showed recent retinal hæmorrhages. Otherwise the special senses show nothing abnormal.

Respiratory system. Respirations 20. There is no dyspnoea and though there is practically no cough the small amount of greenish muco-purulent sputum which is expectorated from time to time is found to contain large numbers of tubercle bacilli but no elastic tissue.

The *chest* is fairly well arched, but the intercostal spaces are much retracted and there is some flattening in the right infra-clavicular region and some retraction below the cardiac area. The apices expand poorly especially on the left side. *Vocal fremitus* is increased on both sides of the chest.

Percussion. The right supra-clavicular region gives slight dulness and there is also slight dulness over the first rib 5 c.m. from the sternum. The right axilla is hyperresonant. The left lung in front and in the axilla is hyperresonant everywhere.

On *auscultation* in front fine sibilant râles are heard at the right apex, and below the first rib the breath sounds are diminished but expiration is not prolonged. Over the left lung the breath sounds are feeble from the clavicle to the second rib, close to the sternum. Percussion and auscultation behind give dulness on right side from apex down to almost the angle of the scapula, while over this area a few moist and sibilant râles are heard. The bases of both lungs are hyperresonant with somewhat weakened respiratory sounds.

Circulatory system. The pulse is small and weak but is regular in volume and rhythm. The radials are somewhat thickened. *Heart.* The apical impulse is extremely weak and can just be seen and felt in 5th interspace in the nipple line. The cardiac dulness is entirely masked by hyperresonant lung. All the sounds of the heart are much weakened but there are no murmurs present nor is there any accentuation of the pulmonary second sound.

Digestive system. The tongue is very pale and flabby with a greyish coating. The upper teeth are absent and the lower are much decayed. The breath has a cadaverous odour. Attacks of diarrhœa are frequent, the motions being small, fluid and dark green in colour containing small green and greyish flaky particles. On microscopical examination of the flaky material *tubercle bacilli* were found in moderate numbers.

The abdomen is much sunken and yields slight tenderness on pressure in the left iliac fossa and in the hypogastrium. The spleen is not palpable nor is there any splenic dulness. The liver does not extend beyond the costal margin in the nipple line.

Genito-urinary system. The testes are normal. The urine is clear, straw-coloured, acid in reaction with a specific gravity of 1012, and on standing gives a moderate yellowish deposit of amorphous material, principally urates. It contains a trace of albumin and numerous hyaline, granular and waxy casts.

The subsequent course was progressively downward. The diarrhœa continued, the temperature remained constantly subnormal, the delirium gave place to semi-coma deepening into coma and finally death on June 16th, eight days after admission. Cultures taken from the blood on June 10th gave negative results. Examination of the blood on June 11th showed 670,000 red corpuscles and 8% hæmoglobin, but few white corpuscles could be seen, and again on June 15th, 400,000 red corpuscles and 8% hæmoglobin. There was marked poikilocytosis, with great variation in the size of the red cells, likewise several nucleated red corpuscles of various sizes.

AUTOPSY BY DR. MARTIN.

The body is that of a much emaciated old man with the usual signs of death. The pupils are equal and not dilated. The upper teeth are absent and the lower are decayed. There is a small ulcer on upper gum opposite the right canine tooth. There is a small ganglion over the left extensor longus pollicis and another over the right flexor carpi radialis. The abdomen is very shrunken.

The *Abdominal Cavity*—The panniculus is greatly atrophied and the fat is bright yellow. The muscles are thin and gelatinous looking. The abdominal cavity is dry. The intestines are collapsed, their serosa pale, smooth and glistening. The small intestines have here and there blue-black patches of discolouration opposite the mesentery. No tubercles are seen. The omentum is pale, broad, thin, non-adherent and irregularly disposed throughout. The liver descends to the costal margin. The diaphragm is at the 4th interspace at the right side and at 5th rib on the left.

The *Spleen*—Is small soft and red, measuring 8½ x 6½ x 2 cm., and weighing 60 grms. There is a recent persplenitis and one small older local thickening. On section the organ is red—atrophic, and the malphigian bodies rather distinct. There is no tubercle, nor is there any evidence of amyloid disease. The pelvis and ureters are normal.

The *Left Kidney* weighs 110 grms. It is small. The capsule is somewhat adherent, leaving a finely granular pale surface with numerous small cysts. Throughout the surface are a number of minute dark brown clots, chiefly within cysts. These on microscopic examination show blood pigment. The organ is firm. The cortex is pale, smaller than normal and is quite irregular. There are no tubercles. The pelvis and ureters are normal.

The *Left Suprarenal* has a central cavity. It presents no change.

The *Right Kidney* measures 10 x 4½ x 3 cm, and weighs 110 grms. It is like the left with a more granular and redder surface, but with fewer cysts.

The *Right Adrenal* is like the left.

The *Bladder* is distended with slightly turbid urine. Its mucosa is very pale. There are no hæmorrhages.

The *Prostate* is normal. The seminal vesicles have a moderate amount of fluid.

The *Testes* appear normal.

The *Stomach* is normal. It contains semi-fluid curds. There are no hæmorrhages.

The *Duodenum* shows acute catarrhal inflammation.

The *Jejunum* and *Ileum* present a number of *dark grayish healed ulcers* situate mostly in the ileum and occupying a longitudinal direction opposite the mesenteric attachment. These are all cicatrized and have irregular and somewhat œdematous edges, while the floors show fibrous strands and in some places puckering of the cicatrix. In all these there is much blackish pigment. There are no tubercles.

The cæcum and appendix are normal.

The *Large Intestines* have a much thickened mucosa—much firmer than normal; is pale, and here and there shows *patches of pseudo-membrane. There is no tuberculosis anywhere.*

The *Rectum* is somewhat congested and the mucosa is thickened, though less so than in the colon.

The *Liver* is small, weighing 1250 grms., and measuring 24 x 18 x 9 cm. The surface is smooth. The organ is fairly firm, and the cut surface has a pale brown colour. *There is no evidence of deposited hæmoglobin.* The lobules are distinct. The gall-bladder has dark green, thick, viscid bile. There are no gall-stones. The common duct is pervious, though the orifice is somewhat obstructed. The glands are normal.

Pancreas is pale and firm. There is no fat necrosis.

The mesenteric glands are normal.

The *Thorax*—The costal cartilages are in part ossified. On removing the sternum, which appears normal, both lungs retract. The right is gathered up at the vertebral column in its upper half, where it is adherent behind and at the apex. There it is puckered very much. Both pleural cavities are dry.

The *Left Lung* weighs 325 grms, There are slight apical adhesions and much anthracosis. The lung is fairly crepitant in general, with a few nodules of consolidation here and there, and on the surface there are some pseudo tubercles. The apex is puckered with a thickened pleura, and there is a small caseous and fibroid mass.

Centrally in the upper lobe are isolated tubercles, broncho-pneumonic areas, with purulent bronchitis, all well localized. There is slight marginal emphysema. The lower lobe is anæmic and dry, but otherwise normal.

The bronchi contain slight muco-pus. The vessels are free. The peribronchial glands are pigmented and calcified.

The *Right Lung* is much contracted and puckered at the apex, where it is alternately solid and emphysematous. The upper lobe on section has slight cavitation, with smooth walls and a few caseous flocculi. Around this are areas of tuberculous pneumonia with isolated tubercles and pus cavities. In the upper half of the lower lobe there is a small area of simple pneumonia, and near it a patch of tubercular pneumonia as well, each of the size of a filbert. At the lowest part is also another patch of simple pneumonia, The brorchi are filled with thick muco-pus. The vessels are free. The peribronchial glands are pigmented, but not tuberculous.

The *Heart*—The pericardial cavity is normal. The visceral layer shows extensive thick anterior and less extensive posterior milk spots. There is much pericardial fat anteriorly, which is yellow in colour.

The heart weighs 135 grammes. The right side is flaccid, the left in systole. Section for large vessels liberates a very small amount of pale fluid blood. The tricuspid orifice admits four fingers easily and the mitral one finger. The tricuspid orifice is 10 cm. in circumference, the pulmonary 6 cm. The tricuspid valves are somewhat thickened. The mitral valves present *an acute verrucose inflammation* and a similar process *on the auricle* above the valves. There is no continuity between the valvular and auricular lesions. The muscle wall is of normal thickness. The right chamber is dilated. The aortic valves are thickened, œdematous and fenestrated but there are no vegetations. There is slight fusion of the valves. The cardiac muscle is pale brown in colour, not very friable. There are abundant patches of myomalacia, especially in the papillary muscles and columnæ carnæ. The coronaries are dilated. The aorta shows early fatty plaques.

Neck Organs—There is early fibrinous tuberculosis of the epiglottis with subjacent hæmorrhage. The laryngeal box is ossified. All else is normal.

The *Brain* weighs 1350 gramms. The dura mater externally is normal, but rather opaque. On its inner surface is a *fine fibrino-hæmorrhagic film* on both sides. The pia is normal. The convolutions are of normal size. There is much cerebro-spinal fluid. The ventricles and substances of the brain and cerebellum are normal.

Superiorly in front of the vermis cerebelli, and apparently attached to the pia, is a *small bean-sized oval tumour*, brownish-gray in colour, and varying in firmness—in some parts being fairly soft, in others calcified.

The *Retina* of the right eye presents *several recent hæmorrhages.*

The *Bone Marrow* of the femur is very red, looking like red jelly. There is very little evidence of fat.

Cultures taken from the heart blood and pericardial fluid gave growths of the diplococcus lanceolatus; from the liver and left lung, staphylococcus pyogenes aureus and diplococcus lanceolatus.

The spleen pulp remained sterile.

Remarks.—As will be seen from the above case report, the patient was suffering from advanced senile tuberculosis, and yet the subjective symptoms were comparatively slight—a condition which indeed seems to be by no means uncommon in the tubercular processes of the aged. In the present instance, persistent diarrhœa and the grave anæmia had rendered the physical condition so weak as to give the pulmonary symptoms far less prominence than might be expected under other conditions and in a younger subject.

The presence of a blood condition, which is indistinguishable from that of pernicious anæmia, is one which has long been recognized as a possible occurrence, though the association with retinal and meningeal hæmorrhages is of more than usual interest. Hæmorrhages into the meninges, so far as the literature indicates, seem to be particularly rare under such conditions.

It may, perhaps, be argued by some that the relative proportions of hæmoglobin and corpuscles is not such as to warrant the application of the term *pernicious* to the type of the anæmia, and yet Eichhort distinctly refuses to acknowledge that in pernicious anæmia there is necessarily a relative increase in the amount of hæmoglobin. The most interesting feature perhaps, however, in the present case is the occurrence of tubercle bacilli in the fæces, when no anatomical lesion in the intestines, suggestive of tuberculosis, could be found. The explanation is, however, of course obvious—the patient having swallowed the sputum which was maintained in such a condition as to render examination for tubercle bacilli a comparatively easy matter. The lesions found in the intestines presented absolutely no evidence of tuberculosis, the pigmented scars being in all probability merely heated typhoidal ulcers. (It is to be regretted that the Widal-Johnston method of serum diagnosis had not yet been added to the hospital service at the time, June, 1896, as it might have aided in clearing up definitely the nature of these cicatrices.) The persistent diarrhœa was obviously associated with the chronic colitis.

The cerebral tumour present, while close to important structures, had evidently not attained sufficient size to present characteristic symptoms, and it is interesting to note that this is the second tumour attached to the vermis cerebelli which we have noted within the past twelve months, where no symptoms were present to arouse the suspicion of an intracranial growth.

THREE CASES ILLUSTRATING THE VALUE OF THE BACTERIOLOGICAL DIAGNOSIS OF LEPROSY FOR PUBLIC HEALTH PURPOSES.[1]

BY

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AND

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Demonstrator in Pathology, McGill University: Assistant Pathologist to the Montreal General Hospital.

(From the Laboratories of the Board of Health of the Province of Quebec and the Montreal General Hospital.)

The case which we wish to bring before the Society to-night is that of a Chinaman, aged 27, who was brought to the Montreal General Hospital in a dying condition, and died a few hours after admission. The man had been a little over a year in the country and was not known to be suffering from any serious illness.

As some suspicions of violent death arose, a coroner's autopsy was performed.

External examination of the body showed a gangrenous, ulcerated area, 2 inches in diameter, involving the skin over the right elbow, surrounding which the tissues were thickened, firm and nodular. Numerous firm nodules were seen on the skin over the face, extremities, back and genitals; over the surface of the glans these were especially well marked.

The nodules on excision showed no signs of necrosis or suppuration and appeared to be chronic. The cellular tissue of the right upper arm was œdematous, with ecchymosis in the course of the lymphatics, and during the autopsy numerous ecchymosed areas, varying from 2 to 6 inches in extent, were found in regions which excluded the idea of their being the result of contusions. The most marked ecchymosis was beneath the right iliac and psoas muscles.

Bacterial examination of these ecchymoses showed a few short, thick bacilli (Proteus) staining by Gram's method; no micrococci.

The nerves showed no changes and in particular no nodules in the nerve sheaths. The lungs were deeply congested, no consolidation, no tubercles, or other nodular deposits. In the left epididymis there were several firm, whitish nodules the size of peas. Cut surface firm and smooth. The other organs showed nothing of special note. Nutrition was good. The gangrene of the skin over the elbow and the evident condition of septicæmia present appeared to explain death.

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[1] Read before the Montreal Medico-Chirurgical Society, Nov. 9, 1896.

The general nodular skin eruption did not correspond with either syphilis, lupus, glanders, variola, nor with any of the forms of skin diseases ordinarily met with. It was only towards the close of the autopsy that the idea of the eruption being due to leprosy occurred to us. A cover slip was then prepared by smearing it with a drop of the juice obtained by scraping one of the nodules. On staining this with carbol fuchsin and decolourizing with sulphuric acid and methylene blue (Gabbett's fluid), innumerable, slender, red rods were seen, many of them arranged in the peculiar clumps designated as lepra cells.

Examination of the nodules in the testicle showed also the presence of numerous lepra bacilla, and sections of the skin showed large numbers in the deeper layers. Cultures from the smaller nodules of the skin on Lœffler's serum and glycerine remained sterile. Inoculation of a small nodule into the anterior chamber of a rabbit's eye, shows at the end of three months a nodular exudate over the anterior surface of the iris. No signs of tuberculosis appeared in the animal, the general condition being good and its weight not diminished.

The examination of cover slips thus established the nature of this case with certainty in a few minutes, whereas without this neither the post-mortem nor the clinical examination by the house physician or the physician in attendance had led to the discovery of its real nature.

The bacteriological method appears to be thus eminently adapted for the examination of any doubtful case of skin disease which may be leprosy, as the bacilli are certain to be found in large numbers in cover slips prepared from the material obtained on scraping the nodules of the skin.

The microscopic resemblance between the leprosy and tubercle bacilli should not form a serious source of error, as in tuberculous lesions of the skin the bacilli are always very scanty, and usually only a few are found in the entire cover slip, while in lepra each microscopic field shows enormous numbers of them.

The lepra bacilli also readily stain by the simple aniline dyes, while tubercle bacilli do not.

The ease and certainty by which the diagnosis of leprosy can be made was also shown in a case which one of us (Johnston) examined for Dr. Shepherd six years ago. This patient, a West Indian mulatto, had a good position as waiter in a Montreal hotel, and to avoid losing his position, allowed himself to be treated for three years for syphilis without any improvement resulting. He then visited Dr. Shepherd's skin clinic, where a diagnosis was made at once from the appearance of the skin eruption and the presence of anæsthetic areas, this diagnosis being confirmed by the microscopic examination.

Recently a case has come under our notice where a Chinese laundryman in Three Rivers, supposed to be a leper, was kept under observation and isolated while a scraping from one of the skin lesions was forwarded for bacteriological examination to the Laboratory of the Board of Health of the Province of Quebec.

No leprosy bacilli were found. Subsequently our personal examination of the case showed it to be one of psoriasis, and a repetition of the bacterial tests again gave negative results.

While authorities differ as to whether leprosy under certain conditions is actually contagious, there can be no doubt as to the advantages of the bacteriological method of diagnosis for public health purposes, since by this means an obscure case can be made out in the course of a few minutes, and if the suspected person is situated at a distance from any laboratory, the samples scraped from a nodule of the skin may be sent by mail enclosed in an envelope addressed to the bacteriologist. In choosing a nodule from which to take the specimen, it is perhaps better to select one in an early stage, before much scarring has taken place, by pricking or scraping off the top of a nodule, and collecting the fluid which exudes on pressure. When dried on an ivory vaccine point or a glass slide samples may be more readily sent by post.

Manson has recommended rendering the nodule anæmic by clamping the base with forceps before taking the sample, but in our experience this is not necessary, as the blood does not interfere with the examination.

We have reported these cases because in spite of the dread with which leprosy is regarded by the public, this simple means af diagnosis does not seem to have been as frequently made use of as it should be by the sanitary authorities.

AMBULATORY LOBAR PNEUMONIA.

BY

G. Gordon Campbell, B.Sc., M.D.

Demonstrator of Medicine, McGill University, Assistant Physician, Montreal General Hospital.

This case is of interest mainly from its rarity, the disease itself presenting no unusual features. In hospital practice, where the great bulk of patients comes from the poorer classes, it is not unusual to meet with acute pleurisy with effusion in the out-patient department. Several times I have been consulted for "shortness of breath and slight cough" of a few days duration and found one pleural cavity almost completely filled with fluid. Pneumonia, or at least that form which sets in abruptly with a severe chill, met with during adult life is extremely rarely encountered in an out-patient hospital practice. The following are briefly the particulars of the case.

N. M., aged 49, born in Ireland, a wood carver by trade, came to the Out-patient Department of the Montreal General Hospital on Oct. 23rd, 1896, complaining of cough with slight expectoration and general malaise. Inquiry into the history of the disease revealed the fact that it had been induced by a severe wetting which he got on Oct. 18th. On the morning of the 19th he rose as usual at 4 a.m., but shortly after had a severe chill lasting one hour and followed by pain in the side. During the day he took to bed and at night cough and expectoration set in. During the following day, Oct. 20th, he remained in bed, but on the 21st got up and sat about the house "not feeling" as he expressed it "quite able to go to work." On the 23rd feeling that he was not improving he came to the hospital, a distance of over a mile from his home and walked a part of the way.

The personal and family history contained nothing of interest. He had been a hard drinker in his early manhood but had been temperate for a number of years.

On examination the temperature was found to be 101.5°, the pulse 120. The right lung showed dulness from the spine of the scapula down, and at the side and front, corresponding very closely with the lower lobe. Over the dull area there was intense dry blowing-breathing and broncohphony. The vocal fremitus was slightly if any increased. A diagnosis of acute lobar pneumonia was made and the patient advised to remain in the hospital. To this however he

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[1] Read before the Montreal Medico-Chirurgical Society, Nov. 20, 1896.

demurred not feeling as he said that he was "ill enough for it." After the grave nature of the disease was explained to him, he consented to be admitted but insisted on going home first. which he did. The same afternoon, Oct. 23rd, he was admitted to the wards under Dr. Molson and to his resident physician Dr. Mitchell I am indebted for the further history of the case. The temperature shortly after admission, rose to 103° and remained between that and 101° until death occurred on Oct. 28th, the tenth day of the disease. The expectoration was rusty, viscid and contained pneumococci. The urine contained no albumin. On the 26th, two days before death, an area of consolidation was detected in the base of the left lung.

The autopsy, made by Dr. Wyatt Johnston, revealed: Acute lobar pneumonia, total grey hepatization of the right lung with commencing red hepatization of the left lung. Acute bronchitis; chronic right and acute plastic left pleuritis; old apical tuberculosis; spleen large and firm; hogsback kidneys with mixed nephritis and some fatty degeneration; slight cirrhosis of the liver; very marked dilatation and hypertrophy of the heart; polypoid white thrombus of the right ventricle; and slight pulmonary embolism.

Clinical Lecture.

RENAL CALCULUS.

CLINICAL LECTURE DELIVERED IN THE MONTREAL GENERAL HOSPITAL ON THE 5TH JANUARY, 1897.

BY

George E. Armstrong, M.D.,
Associate Professor of Clinical Surgery in McGill University.

Gentlemen,

The first case that I will bring before you to-day is one of suspected stone in the kidney. Although it has been known for many generations that stone sometimes formed in the kidney, yet the diagnosis during life and the surgical treatment of this condition is a matter of recent years. When certain substances, which are normally in solution in the urine, are present in excess they crystalize out, and the passing of these crystals in the urine constitutes what is called gravel, the gravel being generally composed of crystals of uric acid or oxalate of lime. But if a few of these crystals become cemented together by mucus or blood clot, and increase in size by fresh deposits from the urine, a calculus is formed. Although the majority of renal calucli have a uric acid or an oxalate of lime nucleus, other substances, such as carbonate of lime, phosphate of lime, a mixture of phosphate and the ammonio-magnesian phosphate (that is, the fusible calculus), cystine, xanthine, and finally urate of ammonia, or the mixed urates, or a blood clot are found occasionally, though rarely, either as the nucleus or chief constituent of renal stones.

It would seem that age and diet have a determining influence on the character of the stone. Thus, while it is true that renal calculi may form at all periods of life from the latter weeks of intra-uterine life up to old age, yet the nature of the nucleus differs with the age and diet of the patient.

Mr. Thomas Taylor, who made the analyses of the calculi in the Hunterian museum, found in the calculi occurring in children the nucleus was generally composed of urate of ammonia, in middle life of uric acid, and in patients over forty years of age of oxalate of lime. He proposed to call the stones having a urate of ammonia nucleus, the infantile calculus.

Renal calculi in children are generally found among the poor who are often fed on food too coarse for their feeble powers of digestion to properly assimilate, while among the children of the well-to-do renal calculi are rare. Mr. Cadge thinks that the frequency of renal calculi among the children of the poor is due to the absence from their diet of a sufficient quantity of milk.

On the other hand renal calculi in adult life generally occur among the rich, who live well and take insufficient out of door exercise.

You will notice also that although the stone forms in the kidney, that the kidney is not the organ at fault. The kidneys are probably doing all of their share of the work, and it is the digestive organs that are functionally unequal to the task imposed upon them. The stomach, liver, pancreas and small intestine are the overworked or functionally inadequate organs, and it is to these that we must direct our attention in attempting to prevent the formation of renal calculi.

When a calculus has originated in a uriniferous tube or in one of the calyces of the kidney it may remain there and continue to grow by accretion, or it may pass down the ureter into the bladder. It may then pass out along the urethra during micturition or remain in the bladder and there form the nucleus of a vesical calculus. Its passage along the ureter is generally accompanied by very severe pain. It is forced along by a sort of peristalsis of the muscular walls of the ureter and by the pressure of urine behind it.

The pain caused by a stone passing along the ureter is called renal colic. As a rule the pain is intense, starts down along the course of the ureter towards the bladder, and is felt in the testicle, the penis and the inner side of the thighs. The patient leans towards the affected side and the leg of that side is drawn up. It is relieved by hot fomentations, or a hot bath and by opium. A hypodermic of morphia relieves the pain and also favours the passage of the stone by relaxing the muscular contraction of the ureteral wall. After the passage, or suspected passage of a kidney stone into the bladder you should direct the patient to carefully observe if a stone is passed during micturition, and if so to preserve the stone for analysis and to confirm the diagnosis.

Recurring attacks of colic arise from fresh formation of renal calculus. I pass around these small stones which have been passed through the urethra. They serve to show you the size of stone that can pass along the ureter, and one of them especially is rough and angular and caused great pain during its passage.

Unfortunately kidney stones do not always pass, but sometimes remain in the kidney increasing in size and extending into the calyces and pelvis of the kidney. Both kidneys may be affected simultaneously or one subsequently to the other.

A stone lodged in the kidney acts as an irritant. It excites inflammation of the mucous membrane lining the pelvis and calyces, a calculous pyelitis. It may excite suppurative nephritis, or fatty degeneration of the kidney, or drop over the mouth of the ureter and by obstructing the outflow of urine, cause a hydronephrosis and later on, the urine becomes decomposed and a pyonephrosis results or a perinephritic abscess, renal fistula or renal abscess. The kidney may be converted into a large abscess cavity, may burst externally or into the peritoneum, stomach, intestine, lung or pleura. The patient may be worn out after months or years by continuous suppuration and die of hectic or exhaustion.

I removed this large stone which I pass around from a large kidney abscess which pointed externally. The peri-renal tissues were absorbed, and the skin thinned to such an extent that a slight superficial incision made without an anæsthetic enabled me to remove it.

The symptoms of stone in the kidney are both subjective and objective, and sometimes there are no symptoms at all. A stone of considerable size may exist for years without causing the patient sufficient annoyance to lead him to consult a physician Such stones are occasionally found after death.

One subjective symptom is pain in the region of the kidney. The pain may be severe or hardly more than a feeling of distress or discomfort. It is generally increased by exercise, or riding over a rough road. It is not the severe pain that occurs in renal colic, when the stone is passing along the ureter. The pain of renal colic is transmitted along the genito-crural and spermatic nerves to the genitalia and thigh. The nausea and vomiting of renal colic are explained by the connection between the renal plexus and the pneumogastric. The pain caused by a stone remaining in the kidney is rarely as severe or as widely diffused as the pain of renal colic. It is more of an ache. The patient sometimes complains of tenderness over the kidney. In one instance it is reported that the patient could by manipulating the side cause the stones to grate one upon another, so that the gratings could be felt and heard. The appetite is sometimes affected and a degree of lassitude is complained of. An examination of the urine often gives valuable evidence of the presence of a stone. You expect to find in such urine blood, pus and crystals of uric acid and oxalate of lime.

The blood is generally small in quantity and can often only be found by the use of the microscope. You should never feel satisfied that blood is absent from the urine until you have examined carefully with the microscope several samples, passed before and after active exercise. The same applies to pus. It is often small in quantity, and its presence should be sought for with the microscope. Pus in acid urine is significant. Crystals of oxalate of lime are nearly always present in the urine from a kidney containing a stone. Tenderness on deep pressure over the kidney is a valuable sign. Sometimes violent shaking of the patient as in succusion will cause pain in the region of the kidney. It is thought that the varying pressure of the abdominal viscera, the passage of faeces along the colon and the variations of intra-renal pressure, are all capable of exciting pain by making the renal tissue press against the surface of the stone.

The diagnosis of stone in the kidney is very difficult. Ransohoff has collected forty cases, in all of which the symptoms of renal calculus existed, and in which exploration of the kidney failed to find a stone. In fact I think that there are but few surgeons who have explored any considerable number of kidneys for stone who have not occasionally failed to find one. In many of these cases, however, the symptoms have been relieved. The simple opening of the kidney capsule sometimes is followed by relief of symptoms. In some cases a small abscess has been found and emptied. Mr. Reginald Harrison has recently reported a series of cases, where incision of the kidney capsule and exploration of the pelvis has relieved a long persistent backache with pyuria. We need further light on the diagnosis of stone in the kidney. I believe it to be important to recognize the difference in symptoms between stone remaining in the kidney and recurring attacks of renal colic, due to the repeated formation of small stones which pass down into the bladder. The symptoms of the latter condition are more severe and characteristic than are those of the former.

The presence of blood and pus in the urine only after active or violent exercise or in notably increased quantities after such exercise points strongly to the presence of stone in the kidney. This was the case with the patient from whom I removed this large stone which I have here. This stone weighs about six hundred grains. It was removed from the right kidney. In the same kidney were these small faceted stones, twelve in number. The left kidney also contained five large stones and a quantity of gravel, yet the urine seldom contained pus and blood except after exercise in a gymnasium. To show you how free from pain such a patient may be, I may tell you that the patient from whom I removed this stone bicycled through England last summer for two months without suffering any inconvenience or pain, and only consulted his family physician because he noticed that his urine was always bloody after he had exercised in a gymnasium. He gave a history of having had renal colic sixteen years ago and again fourteen and twelve years ago. At the time of operation the only guide as to which kidney I should explore was a vague feeling of discomfort on the right side, which was present the greater part of the time. He had felt some distress occasionally on the left side, but much less than on the right.

In women it is easy by means of this ureteral catheter to catheterise the ureters and thus obtain a specimen of urine from either kidney. In man up to the present we are not able to do this with any degree of facility.

A condition which closely simulates stone in the kidney is tubercular pyelitis. In the early stage either condition may cause frequency of micturition and purulent urine and hæmaturia. These symptoms occurring in a thin emaciated patient would suggest tubercular disease, occurring in an otherwise robust and healthy patient would suggest stone. Later on tubercle bacilli might be found in the urine. In cases of doubt bacilli should be carefully looked for.

Treatment.—Bearing in mind that the kidney although the sufferer is not the offender and that the digestive organs are the ones at fault, to the latter we direct our attention. The diet should be such as is easily assimilated. Sugars, fats, and alcohol should be excluded. Spirits and water are less harmful than wines and beer.

Nitrogenous food should be used in moderation. Do not exclude animal food altogether, with the idea that by so doing you prevent the formation of renal calculi. The frequent occurrence of renal calculi among the poor who seldom taste meat is sufficient evidence that an exclusively vegetable diet is not a preventive. The diet should be mixed, varied and such as to promote good health and good digestion.

Sir Henry Thompson advises the use of salines, especially as found in the natural mineral waters. He prescribes the Friedrichshall and Hunyadi Janos waters, given in the morning, hot,and in sufficient quantity to be gently laxative. Citrate of potash and carbonate of lithia may prove useful, as alkalies, neutralizing the excessive acidity. Hot fomentations and anodynes may be required to allay pain.

If the stone remains and grows and is injuring to the kidney, resort must be had to surgical measures. Nephro-lithotomy, nephrotomy or nephrectomy are the operations generally performed.

Nephro-lithotomy was first performed by Mr. Henry Morris, of the Middlesex Hospital, London. Its aim is to open the kidney, remove the stone and to leave a healthy kidney afterwards. It is an operation devoid of much danger and, as a rule, satisfactory in its results. An incision is made about four inches long, three-quarters of an inch below and parallel with the last rib. It begins just external to the erector-spinæ muscle and is carried rapidly down through the muscular layers until the peri-renal fat is arrived at. The outer edge of the quadratus lumborum may be incised if found necessary. The fat around the kidney may be divided by tearing with two pairs of forceps, or by a pair of forceps and the finger. When the kidney is reached it should be carefully explored. First pass the finger over the posterior surface of the kidney and its pelvis. If no irregularity or hardness is felt, pass the finger along the anterior surface. Should no indication of the situation of the stone be detected by this plan, the kidney may be explored by a needle. A long hair-lip needle answers very well. With this, several punctures may be made in the kidney with safety. In doing so, however, have a method. Begin at one end of the kidney and introduce the needle at intervals along the convex border until the other extremity is reached. You may safely make eight or ten punctures in this manner, and probably one of them will strike the stone. Failing to find a stone by puncturing with a needle, do not conclude that there is no stone. Ask your assistant to make firm pressure upon the abdominal wall, pushing the kidney up towards the wound. Then with a scalpel incise the capsule and slowly with a gentle boring motion insert your forefinger through the capsule and kidney tissue into the pelvis. Do not give up your search until you have thoroughly explored the pelvis and calyces of the kidney with your finger.

It is sometimes extremely difficult to find a small stone deeply embedded in a kidney. In one instance, Mr. Henry Morris failed to find a stone after carefully exploring the kidney. The symptoms, however, continued and Mr. Morris removed the kidney. It was laid on a table and even then no stone could be detected. One was present, however, and was discovered when the kidney was laid open.

Some operators prefer to open the pelvis of the kidney instead of the convex border. I have always opened the convex border myself. It is more accessible, the hæmorrhage is not troublesome, and there is less danger of a urinary fistula remaining.

When a stone is found it is seized with a pair of calculus forceps and removed, or sometimes it is more easily slipped out in advance of the finger. If the stone is a large one it may be broken and removed in segments, thus doing less damage to the kidney substance.

After removal, a rubber drainage tube may be inserted through the opening in the kidney into the pelvis for drainage. It should be allowed to remain forty-eight or seventy-two hours.

Iodoform gauze may be lightly packed around the kidney and the wound partially closed.

The dressings should be antiseptic and frequently changed. I like to give these patients boracic acid or salol for two or three days before operation with a view to preventing urinary fever which may occur after this operation, as well as after an operation upon the urethra or bladder.

Nephrotomy is the term employed to indicate incision into the kidney for purposes of exploration or treatment.

The term nephrectomy means the removal of the kidney and nephrorraphy means exposure of a movable kidney through the lumbar incision and its attachment to the edges of the incision.

Nephro-lithotomy is the ideal operation for renal calculus. It aims at removing the stone and leaving a useful kidney afterwards.

RETROSPECT

OF

CURRENT LITERATURE.

Obstetrics and Diseases of Infants.

The Effects of Endometritis on Pregnancy and Labour.

M. V. BUÉ. "Des Endométrites Gravidiques."—*Archiv. de Gyn. et de Tocologie,* Juin, 1896, p. 147.

The history of endometritis in its relations to gestation and labour is a question of comparatively recent date. Acute and chronic endometritis are commonly found apart from pregnancy and their etiology is well established. The uterine mucous membrane is affected, sometimes in the cervix only, sometimes in the body, but generally in both. Is pregnancy possible when the mucous membrane is thus affected? Undoubtedly yes, but fecundity is much diminished. It is difficult for an ovule to attach itself to an inflamed uterine mucous membrane and dislodgement is easy. In cases where the cervix is much involved, pregnancy is generally prevented, the plug of mucous mechanically preventing the upward progress of the spermatozoa. Whether an endometritis preceded gestation or has developed during its course, the symptoms are the same. Either the decidua lining the uterine cavity or that enveloping the ovum may be more or less affected, hence the endometritis of pregnancy has been divided into the *decidual* and *placental* varieties, to which should be added the *cervical.*

From the point of view of pathological anatomy, endometritis has been described as *diffuse hyperplastic, polypous* and *cystic;* but pure types are rarely found, a mixed type being most common. From the point of view of symptomatology, three varieties have been described, the *catarrhal or mucous,* the *hæmorrhagic* and the *purulent,* the last being very rare. The etiology of this disease is interesting and worthy of study. The causes may be local or general. Its commonest local cause is blenorrhagia; the gonococcus of Neisser finds an excellent culture medium in the uterine mucous membrane. It often causes cervical endometritis, more rarely the purulent variety. Blenorrhagic endometritis may precede conception and is then usually aggravated by it, or it may occur during the course of gestation. Old puerperal metritis is another local cause; traces of a localised infection may persist for a long time after an abortion or a confinement in the form of metritis. Sterility often results, or if pregnancy does occur subsequently, the hæmorrhagic tendency which remains promotes abortion. Primitive uterine tuberculosis, cancer of the cervix and fibrous nodules in the cervix, are other local causes of endometritis. Among the general causes are syphilis, tuberculosis, lead-poisoning and acute infectious diseases such as measles, scarlatina, typhoid fever, cholera and influenza. When abortion occurs the cause may be hyperpyrexia, direct poisoning of the fœtus by the infective agent or its products, or it may be a primitive inflammation of the uterine mucous membrane. It is not right therefore to ascribe all abortions occurring during the course of the infectious fevers to endometritis; but if the fœtus is expelled alive with abundant uterine hæmorrhage and there is retention of the decidua, endometritis is most probably the case.

Pregnancy complicated with endometritis may run a normal course; everything depends upon the intensity of the uterine affection. The symptoms most frequently observed in cases of pregnancy with endometritis are important. Vomiting is apt to be more frequent and is often uncontrollable; leucorrhœa is almost constant, yellowish white and slightly viscous when it comes from the corpus, gelatinous and sometimes yellowish-green and staining the linen when it comes from the cervix. Watery discharges may occur either in the earlier or later months, described by some observers as *decidual hydrorrhœa.* Hæmorrhages may occur in the first six months or in the last three months. In the latter case they are due either to a premature separation of a normally situated placenta or to a vicious insertion of the placenta, both conditions being consequent upon endometritis. Some authors have noticed expulsion of fragments of decidua; others have ascribed great uterine tenderness (rhumatisme utérin) to inflammation of the endometrium. It is evident therefore that endometritis leads frequently to the interruption of gestation before term, but the contrary is sometimes found. Gestation may be prolonged on account of the slow detachment of the membranes from the lower uterine segment to which they have become unusually adherent. On examining a case of cervical endometritis one may find erosions, ulcerations, fungosities, mucous polypi, or an accumulation of thick fluid which may obliterate the cervix or may even cause agglutination of the lips of the external os. The cervix itself is large, congested and painful. The course of labour may be affected by endometritis. Abnormal adherence of the membranes may delay labour by rendering the pains weak, infrequent, irregular and inefficient. Inflammation of the neighbouring nerve endings may cause hyperexcitability and lead to tetanus uteri. The dilatation of the cervix is apt to be slow and painful and the membranes which are friable are apt to rupture prematurely. Hæmorrhages during the course of labour, and partial or total adherence of the membranes after expulsion of the placenta, are frequent and troublesome complications. When portions of the membranes or placenta have been retained, hæmorrhage or sepsis may occur. Among the later complications are deciduomata, benign or malignant. In the benign, the placental villosities remain almost normal in structure but proliferate actively ; in the malignant the stroma of the villosity is transformed into embryonic sarcomatous tissue (sarcoma chorio-cellulaire). These deciduomata provoke repeated hæmorrhages which soon induce grave anæmia ; the malignant variety is subject to metastasis and is liable to return after removal.

The diagnosis of endometritis requires a local as well as a general examination, and no single symptom is decisive or pathognomonic. The prognosis is grave for the fœtus and may be grave also for the mother, depending upon her previous general health as well as the intensity and causation of the disease. The treatment is important. Prophylaxis is the ideal treatment when the patient is seen early enough. The endometritis should be treated first locally (cauterisation, curettage) and then if it depends upon an intoxication or a general infection, the specific cause should be attacked. If pregnancy has begun, one must prepare for accidents. In cases of hydrorrhœa or hæmorrhage rest in bed should be ordered. Warm injections, copious and with but little force, are helpful in some cases. If there are labour pains and abortion is threatened, opiates are indicated ; when it is unavoidable, the uterine cavity should be completely cleaned out. During labour, it may be necessary to treat hæmorrhage, rupture the too resistent membranes, or even dilate the os artificially. During the third stage of labour, special pains should be taken to secure the complete expulsion of placenta and membranes and guard against the dangers of retention. Subsequent hæmorrhage or sepsis may require curetting, douching and packing the uterine cavity with iodoform gauze.

Polyneuritis Complicating Pregnancy and Labour.

CH. VINAY. " Polynévrite consécutive à la grossesse et à l'accouchement. Paralysie des quatres membres. Guérison."—*Archives de Gyn. et de Tocol,* Juin, 1896, p. 432.

Polyneuritis occurs sometimes during the course of gestation, sometimes during the puerperal state. The former variety is rare, the latter more common. The assertion of Möbius that puerperal neuritis is confined to the cubital and median nerves is incorrect, cases having been reported of general motor and sensory troubles in all four extremities. The only characteristic feature of this form of neuritis seems to be its septic origin, the nerve extremities being affected by the septic poison in a manner similar to that observed in other infective diseases such as diptheria, pneumonia, typhoid fever, la grippe, &c. Polyneuritis in pregnant women is much rarer, only four authentic cases having been recorded. The type was more severe in these cases, and uncontrollable vomiting seems to have been the pathogenic condition in all. In the present case which is reported at length, the paralytic symptoms began only at the end of gestation, were preceded by uterine hæmorrhage and accompanied by abundant vomiting, but complete paralysis did not occur till the fourth day after labour. The patient, æt 38, had borne 6 children and had 2 abortions; there was no neurotic history. During the last three or four months of pregnancy, there were frequent hæmorrhages, the blood coming away sometimes liquid and red, but more frequently in dark clots. These hæmorrhages were painless but caused great exhaustion. During the last two months she had attacks of vomiting and complained of pains in the calves of the legs with tingling in the feet and hands. She could walk easily but became tired very soon. Labour was normal, the child was small, and the delivery of the placenta was followed by considerable loss of blood. On the third day she complained of general malaise and headache, but had neither chills, diarrhœa nor abdominal pain; there was elevation of temperature for 48 hours. On the fourth day she tried to get up, but found that she could not stand, and to her astonishment she fell to the floor. The arms were equally powerless; she could not hold her child, put her hands behind her head, carry food to her mouth, sew, or open the blade of a knife. In a state of repose she felt lancinating tingling sensations in the arms and legs. She nursed her child for a month and was then, admitted to hospital. Her general condition and appetite were good there was slight constipation and the lochia had ceased. The temperature was normal, heart and lungs sound, no albumin in the urine, no trouble in defecation or micturition. The muscles of respiration, of the tongue, face and eyes were unaffected, the patellar reflexes were abolished; there were no trophic troubles except wasting of the muscles in both arms and legs; the organs of sense were unaffected, the intelligence was normal and there was no objective troubles of sensibility. Electric sensibility was intact.

The treatment prescribed was a hypodermic injection of Ergotine (1 gram.) every other day, and on the alternate days a half-hour electric bath for the legs. Under this treatment the symptoms gradually improved; at the end of three months the arms had regained their natural movements and the legs were strong enough to allow her to stand and to walk slowly with a little hesitation. A couple of weeks later she was able to resume her ordinary household duties. The diagnosis was easy, poliomyelitis being the only disease to exclude. The pathogeny is obscure; probably a general dyscrasia resulting from repeated hæmorrhages and severe vomitings during pregnancy, a considerable hæmorrhage at the conclusion of labour and a slightly febrile puerperium acted as marasmus, chlorosis and diabetes sometimes do, and caused a polyneuritis. Neuritis occurring during pregnancy is more serious than that of the puerperal period. It was found necessary to induce abortion in the case reported by Desnos and the patient took two years to regain health and strength. Soloview's case died. In paralysis from neuritis as in paralysis from traumatism, the examination of the general sensibility as well as of the electric sensibility gives valuable information respecting the probable course of the disease.

Air Embolism in Placenta Prævia.

LESSE. "Ein weiterer Fall von Luftembolie bei Placenta prævia."—*Zeitschrift für Geburtshülfe und Gynakologie.*—Band xxxv, 2 Heft.

Placenta prævia occurs frequently in Berlin. In August, 1894, Heuck[1] reported a fatal case of air embolism while version was being performed for Placenta prævia in the Berlin Clinic. Previously two similar cases had been reported by Kramer[2] and Krukenberg.[3] On 8th April, 1896, a IV-para with a marginal placenta prævia was admitted. Her first labour ended spontaneously, her second was terminated with forceps and her third with version. She was strong, well-nourished, somewhat anæmic, with a pulse of 80, regular and strong, and was in the 9th month of pregnancy. She had a sharp hæmorrhage on the 4th April and again in the afternoon and evening of the 7th. As her general condition was good, the pains weak and the bleeding slight, a tampon was applied. After several hours the os was sufficently dilated to allow two fingers to be passed, and it was decided to perform version. A few drops of chloroform were given, the membranes were ruptured, two fingers were passed into the uterus and the left foot was seized and brought down through the os uteri without any difficulty. During the manipulation, a moderate quantity of liquor amnii flowed away and both pulse and respiration were regular and quiet throughout. Suddenly the breathing stopped for a moment, then began again but remained superficial and gasping. The lips were cyanotic, the countenance livid, consciousness gone, the pupils reacting. The hips were raised, hypodermics of ether were administered together with saline injections, followed by artificial respiration and heart massage. The pulse was imperceptible, but by auscultation the heart beat was found to be 30 to 40 per minute. The bleeding had now entirely ceased. The condition of the patient changed from time to time and she was kept alive for five hours by the continuous use of artificial respiration. At the post-mortem, a quantity of large and small air bubbles escaped when the right heart was opened under water; it contained much liquid blood. The left heart was empty and contracted, the heart muscle and valves normal. Both lungs contained air and on section a quantity of bloody froth exuded. There was some air in the smaller branches of the pulmonary artery, but none in the larger branches.

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[1] Zeitschr. f. Geb. & Gyn. 1894, S. 140.

[2] Zeitschr. f. Geb. & Gyn, Bd. xiv, Heft 2.

[3] Centralb. f. Gyn. 1892. S. 169.

The cause of death was undoubtedly air embolism.

The important question in this case is "How did the air get into the circulation, and how did she live for five hours afterward?"

In Heuck's and Kramer's cases, strong pains set in immediately after rupture of the membranes, before version was performed. Heuck's opinion was that the air which was between the uterine wall and the separated portion of the placenta was forced by these pains into the veins, whence it was aspirated into the spermatic vein and so into the vena cava and right heart by the sudden lowering of abdominal pressure and the cessation of uterine contractions. Kramer thinks it more probable that after the cessation of the pains a deep inspiration made the blood pressure in the abdominal veins negative and rendered the entrance of air easier. A mechanical pressing inwards of the air by the operator's arm which tamponed the vaginal outlet, and the sudden outflow of liquor amnii may have been subsidiary causes. Freudenberg considers the sudden discharge of liquor amnii under high pressure to have been the principal cause, but in Lesse's case there was only a moderate quantity of liquor amnii flowing away with little force. Lesse's explanation is that air was carried up by the hand during the operation of version and was mechanically forced into the open lumina of the veins. That the patient lived for five hours he thinks explainable by the continued use of artificial respiration and the slow accumulation of air in the right heart. These cases prove that version in placenta prævia is attended by danger, quite independent of anæmia from hemorrhage. When performing version in such cases, the danger of air embolism should be borne in mind and the manipulation should be as gentle as possible.

Is Uterine Tympanitis an Indication for Cesarean Section?

AHLFELD. "Giebt Tympania uteri eine Indication zur Entfernung des uterus in partu?"—Zeitschrift für Gebürtshulfe and Gynäkologie. Band, xxxv. 2, Heft.

The Porro operation of Ludwig in Sept., 1895,[1] and the Sänger operation of Esser[2] in Jan., 1896, for the termination of labor complicated with *Tympania Uteri* have been variously criticised by German obstetricians, and a warm discussion has ensued respecting the circumstances which warrant the extirpation of the uterus during or after labour. Esser did a conservative C. Section after he had failed to deliver with forceps an immature fœtus with enormously distended abdomen. He might have perforated the abdomen and delivered without much difficulty, but fearing to expose the mother to the risks of sepsis from the possibly decomposed or purulent fœtal tissues he preferred to do a Sänger operation. Fritsch, Chrobak, Dohrn and Ahlfeld criticised his treatment, declaring that C. Section was not indicated under the circumstances. In Ludwig's case, the patient was in her 14th pregnancy and the child was unusually large. The physician in attendance extracted the head with forceps and brought down one arm but could not deliver the rest of the body. A second physician having also failed, the patient was finally transferred to Chrobak's Clinic. On admission the temp. was normal, pulse 120, uterus tympanitic, and an intolerable stench proceeded from the passages. On account of the softness and friability of the fœtal tissues, it was found impossible to use force enough to extract the child's body. Podalic version was then attempted, and one foot was brought down, a quantity of gas escaping during the manipulation; but the leg tore away at the knee and delivery could not be effected on account of the size of the child and the softness of its tissues. A Porro operation was then performed and a child weighing upwards of 7,700 grammes was extracted. The Porro operation was selected because it was thought that delivery by embryotomy would have taken a long time and would have exposed the mother to serious risks. Ludwig gave it as his opinion than in a roomy pelvis, unusual size of the fœtus together with softness and friability of its tissues would make delivery so difficult that C. Section should be preferred to embryotomy in the mother's interests. On the other hand, Ahlfeld criticises Ludwig's views and practice, holding that delivery could have been accomplished better otherwise, and that C. Section was unnecessary. Chrobak supports Ludwig's contention on the ground that the radical removal of the uterus was indicated on account of the sepsis which existed, especially as the loss of the uterus would no longer be of so much importance to the patient on account of her age and the size of her family (14th pregnancy, 13 living children).

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[1] Centralblat f. gyn. 1896. No. 3.

[2] Centralblat f. gyn. 1896. No. 12.

In discussing these cases, Ahlfeld proposes the following questions:

(1) Is *tympania uteri* during labour an indication for C. Section (Porro)?

(2) Has the obstetrician the right to remove the uterus for the purpose of sterilising the patient?

While considering the first question it must be remembered that a large number of women who have developed *tympania uteri* during labour have recovered without operation, and have even had a normal puerperium. In cases of utirine tympanitis, the obstetrician is seldom in the position to give a prognosis *quoad vitam* with any degree of certainty. In the present state of our knowledge, we can not predict in any individual case that without operation the patient will die nor that the removal of the uterus will save her life. On the contrary, delivery by embryotomy with subsequent cleansing and disinfection of the uterine cavity will be more likely to yield favourable results. Moreover if blood-poisoning is so far advanced that an unfavourable prognosis is warranted, the removal of the uterus will no longer help matters, according to Ahlfeld. In his own practice, in cases of fever during labour and septic endometritis, he has obtained excellent results by washing out the uterus with alcohol immediately after delivery. He uses several litres of a 50 per cent. alcohol. The treatment is not painful and no ill effects have been noticed, the puerperium being in many cases normal or complicated with only a slight rise of temperature.

It is more difficult to answer the second question, whether an obstetrician is warranted in removing the uterus for the purpose of sterilising the patient. There can be no question of the advisability of such a course when pregnancy is complicated with such pathological conditions as carcinoma or fibroma uteri or osteomalacia, but it is an entirely different matter when it comes to the removal of the uterus from a previously healthy woman for some impediment to delivery.

The wishes of the patient, her family and friends must be taken into account in such a case. The endeavour of every obstetrician should be to bring the mother safely through labour without damaging her genital organs or interfering with their subsequent ability to function. Ahlfeld concludes that the removal of the uterus is indicated during or after labour, only in those cases where life is to be directly saved by the operation (as in uncontrollable hemorrhage or septic endometritis (?)), or where there is some complication independent of delivery itself (as fibroma, carcinoma or osteomalacia.)

The Use of Steam in Puerperal Endometritis.

EMANUEL KAHN. "Die therapeutische Anwendung des Dampfes gegen Endometritis puerperalis." Centralblatt f. gyn., 5th Dec. 1896.

After eight or nine years experience of steam in uterine surgery, Prof. Snegirjow in 1895, recommended its use as a cauterant and hæmostatic, claiming that it checks hæmorrhage, destroys odour, lessens the sensibility of the internal uterine wall, and possesses valuable antiseptic properties. It has since been used with success in cases of inoperable cancer of the corpus uteri, in hyperplastic endometritis, in putrid abortion and recently in puerperal endometritis. The apparatus consists of a metal reservoir mounted on a stand, heated by a large spirit lamp or gas flame. From the top projects a thermometer registering up to 200° C. The steam is conveyed from the dome of the reservoir by means of elastic tubes to which may be attached nozzles of various shapes and sizes. A stop-cock is provided to regulate the passage of the steam. The nozzle is passed cold into the uterine cavity through a speculum; the steam is turned on and made to play upon the affected part in a single jet or in several small jets according to the requirements of the case. The temperature of the steam is kept at 100° C. for two minutes and is then raised to 115° for a quarter of a minute to a minute. The steam fills the uterine cavity stretching its walls and exciting powerful contraction. The patient feels no discomfort except the slight pain caused by the strong uterine contraction. No subsequent ill effects have been noticed even in cases where the infective process had already spread into the tissues around the uterus. The powerful uterine action excited by the steam is found to continue and involution is more rapid. In regulating the temperature of the steam and the time of its application, the consistence of the uterine wall must be taken into account. The thinner and softer it is, the lower should be the temperature of the steam; the thicker- it is, the higher may be the temperature used, and the stronger will be its action. If there is inflammation without as yet pus formation, the results will be good; but steam should not be used if there are collections of pus in the tubes. If there are blood-clots in the uterus or portions of placenta or membranes, they must be first removed by means of the finger or curette, as steam hastens decomposition in such materials. When steam is brought directly in contact with the internal uterine surface, the scalded endometrium forms a protective covering preventing fresh infection. The subsequent treatment consists of an intra-uterine douche on the second or third day of hot sterilised water or an ordinary saline solution or a one per cent. lysol solution. Nine case-reports are given with temperature charts, and the author concludes that steam applied thus to the uterine cavity

(1) is without injurious results and but slightly painful;
(2) removes or diminishes uterine tenderness;
(3) arouses powerful uterine contraction;
(4) removes odour;
(5) destroys bacteria directly;
(6) through the closure of the blood and lymph vessels by the coagulation of albumen, forms a protective covering beneath which fresh granulations form.

J. C. Cameron.

Pediatrics.

Treatment of Scarlet Fever.

CAILLÉ. "Scarlet fever, prevention and disinfection."

ACKER. "The hygienic management and general treatment of scarlet fever."

JACKSON. "The treatment of the throat, nose and ear in scarlet fever."

NORTHUP. "The treatment of scarlet fever in the Willard Parker Hospital."—*Archives of Pediatrics*, November, 1896.

In these four papers we have the treatment at present employed in scarlet fever by some of the most eminent of American writers on diseases of children.

With regard to the question of prevention, the character of the germ, its condition of life, and the method of its transmission from one individual to another, naturally arise ; and, although the microbe itself has not yet been isolated, all agree that it is a specific poison, capable of reproducing itself and transmitted mainly by personal intercourse. The presumption is also in favour of its entering the system by the naso-pharynx and respiratory tract, hence Caillé advises washing out with salt water several times a day the nostrils of children exposed to the disease, in order to remove as far as possible any decomposing secretions present there. He considers the view that domestic animals can themselves suffer from the disease and convey it to man as not proven, the milk and drinking water epidemics, reported from time to time, being necessarily lacking in bacteriological proof.

On the point of incubation and duration of infection one gets no information. A limit of three weeks must elapse after exposure before freedom from attack is secured, and an isolation of at least six weeks is demanded (Caillé).

Preventive measures are to be carried on in three ways: 1. Isolation of the patient and avoidance of the sick room ; 2, Disinfection (personal and of rooms); 3. Ventilation to prevent concentration of poisonous matter. To the usual directions contained in all text-books are added a few practical points, such as, not allowing the nurse to take food in the patient's room, but requiring her before going to meals to disinfect hands and arms with green soap and 1-2000 bichloride, and to put on a long loose gown which hangs outside of the sick-room. Again, of using the same disinfectant, 1-2000, for her hair as for her body at the termination of the case. In all cases the removal of the patient to an isolating hospital, if possible, is to be insisted upon as the best means of preventing the spread of the disease. In schools, attention is drawn to the excellent breeding ground for germs which is provided by a small, hot room, densely packed with damp overcoats and wraps. Caillé also refers to a point made by him on several occasions, that scarlet fever is more prone to attack children with carious teeth, large tonsils, and adenoid growths; and finally he considers sulphur fumigation as absolutely valueless, and advises a trial of chlorine as a substitute.

For the fever no treatment is required in the mild cases, which constitute nearly ninety per cent. of the whole. They, however, must be put to bed and given fluid diet for the first two weeks, soft food for the third week, and solids only after they are allowed up. Acker would make the dieting even more rigid, keeping entirely to milk until desquamation is well advanced.

High temperature demands the use of antipyretics, and in hospital practice at least, all others have been abandoned for cold water, either in the form of sponging, baths, or wet packs. Acker advises beginning with the milder tepid sponging and going on to baths if necessary. Northrup alludes to the inherited fear of treating exanthemata by cold water on account of the danger of the eruption "striking in," and insists most strongly on the paramount importance of reducing the temperature by this, the only means at our command. In mild cases he modifies the wet pack by keeping warm blankets applied to the extremities, while the face and trunk are being freely sponged. The grave cases of hyperpyrexia are put at once into tub baths and treated vigorously until the cerebral symptoms and quality and rapidity of the pulse beats show that the temperature is being reduced. "This struggle with excessive temperatures early in the eruptive stage of scarlet fever is as imperative as that of sunstroke, and more prolonged. . . . At the Willard Parker Hospital it is considered a duty very becoming to the most experiened man on the staff to personally superintend the early bathings."

The eruption, which from its itching and burning, is a constant source of irritation in many cases, Acker treats by oiling the entire surface with some bland oil or bacon rind. He mentions a number of substances lately in favour for this purpose, among others carbolic acid, eucalyptus oil, and ichthyol.

Irrigation of the throat by very hot saline or boric acid solutions seems to meet with general favour. For the nose, however, Jackson considers that irrigation increases the danger of otitis media through inflammation of the Eustachian tubes. Spraying, provided the child does not snuff up the solution, and wiping out the anterior nares with pledgets of cotton soaked in boric acid solution are recommended.

Nephritis, the most serious of complications, it is impossible in many cases, even with the greatest care, to prevent. Where the onset is acute with headache, vomiting, stupor, convulsions and suppression of urine, diaphoresis is to be induced as rapidly as possible. Northrup gives a hot-tub bath followed by a wet pack with hot drinks and Dover's Powder. Copious draughts of water are given while the patient is in the pack. Nitroglycerine in doses of $\frac{1}{500}$—$\frac{1}{200}$ of a grain every two hours, he has also found highly efficacious.

Among other complications one notes true diphtheria as distinguished from the usual membranous sore throat by the presence of the Klebs Lœffler bacillus, and Jackson points out how rarely the pseudo-membrane, spreads to the larynx, and how prone it is to invade the nostrils and be the direct cause, perhaps, of a fatal septicæmia. Affections of the joints, Acker looks upon as a form of rheumatism, and treats them as such with the administration of salicin or salicylate of sodium. Northrup, on the other hand, looks upon them as somewhat resembling gonococcal arthritis clinically, except that there is great local heat and redness. The only treatment used is cold locally followed by pressure and passive movements later on. In most of the cases recovery is complete.

G. Gordon Campbell.

Pathology.

"La Doctrine des Cirrhoses du Foie."

(Continued.)

The scheme of origins of connective tissue overgrowth in the liver given by me in the last number of the JOURNAL is not in any respect visionary. We obtain clear evidence that fibrosis may show itself, especially in one or other of the six regions mentioned. But it is equally true that when the different parts are so intimately connected, a fibrosis originating in one region must almost inevitably affect very seriously other regions and thus, save in the earliest stages of the disease, it is practically impossible to meet with uncomplicated cases of one or other form. Every cirrhosis recognized clinically is truly mixed. If, for example, obstructive disease of the large bile ducts leads to fibrous overgrowth around the interlobular bile ducts that overgrowth tends to affect the whole portal sheath, and the interlobular portal veins and the branches of the hepatic artery became sooner or later involved in the new growth; so also the disturbance does not only affect the bile ducts, but tells upon the bile capillaries of the lobules, and the apparent invasion of the periphery of the lobule characteristic of biliary cirrhosis would seem to be largely of the nature of a replacement fibrosis, the peripheral cells becoming atrophied. Thus too a portal cirrhosis does not merely affect the branches of the portal vein, but sooner or later implicates the other structures in the portal sheaths; and not only is this the case, but as Senator points out, the presence of one form of cirrhosis may render the conditions favourable for the subsequent development of another form.

Nevertheless I am strongly of the opinion that any classification of cirrhosis to be satisfactory must be based upon the primary anatomical lesion, for such classification alone can indicate or elucidate the causation and the clinical course of the disease.

It must be freely acknowledged that there is yet very much to be accomplished. Our knowledge of cirrhosis as of fibrosis in general is, as I have pointed out elsewhere, very imperfect and insecure. Still the many observations of the last five years, more especially of French workers, all, I think, support a classification such as that here suggested, and I cannot do better than pass in view the separate forms pointing out how the anatomical classification is at the same time ætiological.

I. *Portal cirrhosis.* This, it does not need to be said, is already well recognized by all writers on the subject. There is a general consensus of opinion, on the part of recent workers, that it is of toxic origin, namely, that matters passing from the stomach and intestines into the portal blood set up irritation along the medium-sized branches of the portal vein and so predispose to the development of new connective tissue around them. Early stages of this condition show that there is a definite small cell infiltration in the portal sheaths. We have clear evidence of inflammatory disturbance.

By the contraction of and compression exerted by the bands of fibrous tissue is produced the typical hob-nailed or gin-drinker's liver. All recent writers point out that this last name is in many cases libellous. The condition is not confined to alcoholics. Drs. R. P. Howard, Rolleston and others have found the hobnailed liver in children who have never tasted alcohol in any form, while contrariwise the evidence of the post-mortem room is that the confirmed toper only exceptionally presents the small contracted liver. It is only true that in most cases of hobnailed liver there is a history of indulgence in alcohol. Krawkow[1] suggests that alcohol acts by inducing a gastro-intestinal catarrh which permits the absorption of poisonous substances from the intestines and these in their turn lead to the cirrhosis around the portal vessels. I would refer those interested in the relation between alcohol and cirrhosis to a very full abstract of the thesis by W. J. Kerr, in the *Manchester Medical Chronicle* of last year,[2] in which the matter is carefully studied, and in which it is shown that the typical alcoholic liver is enlarged and fatty. On the other hand several observers, mostly French, have shown that feeding animals with cultures of certain microbes, and the introduction into the circulation of filtered culture fluids in which bacteria have been grown, may equally lead to cirrhosis, and so the theory that atrophic or portal cirrhosis is due to toxic absorption is becoming very generally accepted.

II. *Biliary cirrhosis.* Biliary cirrhosis proper, like the main cause of biliary obstruction (gall stones) occurs most frequently in women, and, with Senator, I would distinguish this from the "hypertrophic cirrhosis" with jaundice. Rolleston has published a very instructive case of congenital obstruction (cystic liver) in which the growth of connective tissue around the bile ducts was admirably defined. At a later stage, as already indicated, the fibroid change spreads and implicates surrounding tissues, but into these subsequent effects of biliary obstruction I will enter when discussing pericellular cirrhosis.

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[1] Krawkow, Arch. de Med. Exp. et d'Anat. Path., No. 2, 1896.

[2] *Manchester Medical Chronicle*, New Series, IV., 1895-96, pp. 225 and 310.

III. *Arterial cirrhosis.* It is generally held that fibroid overgrowth around the branches of the hepatic artery is a rare condition, and that in general arterio-sclerosis, the liver shows no such arterial changes as are recognizable in the kidneys, spleen and other organs. It is true that in the liver the arteries do not stand out so prominently as they do in sections of the organs above mentioned. But it must be remembered that relatively to the size of the organ the hepatic arteries are in the healthy condition singularly small, and even when their walls are considerably thickened and present fairly extensive peri-arterial change, they may escape notice. Examining sections of livers from about one hundred consecutive necropsies I have been surprised to find that hepatic arterio-sclerosis is far from uncommon. At the same time I have encountered no extreme case of this condition. It may be very well marked in ordinary portal cirrhosis. Here the conditions leading to the periportal change lead also to general arterio-sclerosis, and it is difficult to say whether the " periarteritis" is of independent origin, or is an extension of the fibrosis affecting the portal sheaths in general.

From the fact that the bacterial products introduced into the general circulation may induce cirrhosis, Rolleston is inclined to urge that the cirrhosis in such cases originates through (? or around) the hepatic artery, and is consequently of arterial origin. This may be so, but it does not strictly follow : that is to say, the poison in such cases circulates through all the system and reaches the liver by the larger portal as well as by the smaller arterial circulation. We require further details as to the character and distribution of the fibroid change in these experiments.

On the whole therefore it must be admitted that primary arterial cirrhosis, in the sense employed by me, leads to relatively slight hepatic disturbance. Clinically this form does not seem to be capable of recognition.

IV. *Secondary.* This form also is clinically unimportant. From a pathological standpoint it is important inasmuch as it calls attention to the fact too often neglected that in the production of fibrosis the lymph channels of an organ play a very prominent part. In portal cirrhosis for example it is not the toxic agents circulating in the portal veins that directly set up the fibroid change, but rather it is these same diffusible toxic agents transuding through the vessel walls into the surrounding lymph spaces and channels which there set up irritation and fibroid overgrowth. It is around the branches of the portal vein that we see the small cell infiltration which we are accustomed to recognize as the earliest stage of portal cirrhosis.

In the extension of fibrous strands inwards from the thickened and chronically inflamed capsule of the liver, just as in the development of insterstitial pneumonia secondary to chronic productive pleurisy, we can only explain the connective tissue overgrowth by assuming that toxic substances are conveyed from the surface into the organ along the lymphatics, and that in their course they set up that irritation which leads to connective tissue overgrowth.

V. *Centrilobular.* This form apparently only develops as a consequence of chronic heart or lung disease associated with passive congestion of the liver and the condition of nutmeg liver. Passive congestion in general may lead to fibroid overgrowth originating around the veins, and it is around the central intralobular branches of the hepatic vein that such fibroid overgrowth may at times be recognized. While sundry French observers would ascribe one form of hypertrophic cirrhosis to this central development of fibrous tissue, it is difficult to agree with them. The liver of passive congestion may be larger than normal but congestion is not hypertrophy, and associated with any degree of centrliobular cirrhosis there is marked atrophy of the liver cells, while the amount of connective tissue laid down is relatively slight as compared with what may be developed in perilobular cirrhosis. It is unfortunate that this term, hypertrophy has been introduced at all in connection with cirrhosis. This form also is incapable of being recognized clinically; it may be suspected in long continued obstructive disease. It is in every respect one of the minor forms.

VI. *Pericellular or Replacement Cirrhosis.* While I am inclined to think that in portal cirrhosis there is primarily an overgrowth of connective tissue around the medium sized branches of the portal veins and recognise a similar deposit occurring around the bile ducts, arteries and branches of the hepatic veins, there is another highly important deposition or development of new connective tissue in the liver which yet remains to be discussed, one which has up to the present received too little attention, although from time to time high authorities such as Kelsch and Wannebrouck, Hamilton, Beale, and Grandmaison have more or less directly called attention to it. This is the replacement fibrosis to which I referred at some little length in a recent communication.[1]

Where isolated cells of a tissue or collections of cells atrophy and die there is in general an attempt to replace them, if not by cells of a similar nature, then by connective tissue, or, failing this, by fluid (as in some cyst formations.) A replacement fibrosis of this nature may be localised, as after scattered necroses through the liver substance. Such fibrosis very possibly explains in part the cirrhosis occurring in malaria, and in those infectious and septic diseases in which sporadic necroses of the liver are becoming more frequently recognized.

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[1] Middleton Goldsmith Lectures. N.Y. Medical Record, March, 1896.

Or on the other hand it may be more generalised, affecting the periphery of the lobule or in some cases the whole lobule. In the Pictou cattle disease this could be seen in its various stages. Pictou cattle disease is a chronic, infectious disease of cattle in Nova Scotia characterised especially by extensive cirrhosis of the liver. In early cases, as first pointed out by Dr. Wyatt Johnston, the liver cells show various evidences of degeneration, and this stage is followed by atrophy so extensive that in advanced cases all the cells of some lobules may become unrecognisable, their place being taken by a delicate connective tissue. In other regions, short columns of the atrophied cells may be isolated and surrounded by similar connective tissue, while, as in biliary cirrhosis, there may be very numerous imperfectly formed bile canals, examples of what I have termed " reversionary " degeneration of the liver cells. Along with this there is in general singularly little small-celled infiltration. The process is essentially one of atrophy of the liver cells by toxic agency followed by replacement fibrosis.

In congenital syphilis the process appears to be of a like nature and, in acquired syphilis, accompanied by multiple gummata in the liver I have seen a very similar condition for a considerable distance around some of the more recent formation infiltrations.

In syphilis, however, the process is frequently complicated by not a little small-cell infiltration and the presence of cellular gummata.

In Hanot's hypertrophic cirrhosis, and in the cirrhosis following biliary obstruction the periphery of the lobules presents the same process, complicated in the latter case by changes of another nature.

It is interesting to note that in all cases where this pericellular cirrhosis is well marked the liver tends to be enlarged—hypertrophic—or if not enlarged is not found hobnailed. There appears to be a difference in the way in which the new connective tissue is laid down. Whereas in ordinary portal cirrhosis there is a frankly inflammatory infiltration of small round cells, followed by connective tissue growth, the new tissue is typically cicatricial, *i.e.*, with full development it contracts very markedly, and so produces the hobnailed condition. In such cases the atrophy of the liver cells is secondary and is in the main due to the presence of the fibrous bands. In the cases of extensive replacement cirrhosis above referred to, there is curiously little small-celled infiltration; a loose transparent connective tissue develops which evidently is not nearly so prone to contract.

Degeneration and atrophy of the liver cells may be brought about in four ways:

1. By pressure.
2. By toxic substances reaching the cells by the circulation.
3. By toxic substances reaching them along the bile capillaries.
4. By arrest of function resulting from obstruction of the bile ducts.

To the first of these I have already referred: the contraction causing the atrophy does away with the opportunity for a replacement fibrosis. About the third possible way we know little. It is unlikely that toxines should diffuse up the bile canals in a direction contrary to the flow of bile. With regard to bacteria penetrating the liver along the bile ducts and producing toxins we are in doubt. We know from the researches of Welch, Flexner and others that pathogenic microbes are not infrequent in the gall bladder, and in the last two cases of hobnailed liver coming to the postmortem room of the Royal Victoria Hospital I was not a little surprised to gain cultures of the B. coli communis (the most common form to be found in the gall bladder) from the liver juice when other glandular organs did not show this form. But on the whole it is for the present to be regarded as unlikely that degeneration of the liver cells and cirrhosis are induced to any considerable extent by toxic agencies passing up the bile ducts and capillaries. It would seem more probable that obstructed and perverted action of the liver cells by closure of the bile ducts, leads to their degeneration.

The other two are, it would seem, the main causes, arrest of functions by obstruction and intoxication from the blood.

It may well be that as Senator suggests Hanot's hypertrophic cirrhosis differs from the biliary cirrhosis of obstruction.

The ecchymoses which are one symptom of the former disease are suggestive of an infectious agency, as again is the accompanying leucocytes. As Hanot and Meunier have shown [1] the number of white corpuscles in the blood of five cases was increased to 13,000 or 20,000 per cb. mm. No such leucocytosis is observable in ordinary atrophic or hypertrophic cirrhosis. It may well be that the cirrhosis of Hanot's disease like that Pictou cattle disease and congenital syphilis is of bacterial origin and hæmatogenus (if the expression be permissible) and that herein lies the distinction between it and the cirrhosis following biliary obstruction.

Briefly to sum up the conclusion to be arrived at from the analysis of the forms of fibroid change which may manifest themselves in the liver, it would appear that some—the arterial and centrilobular—are clinically unrecognisable; one (that secondary to perihepatitis) may lead to a contracted condition and uneven surface of the organ resembling portal cirrhosis; another, portal cirrhosis, is clinically and histologically the most sharply defined form; biliary cirrhosis proper would seem to present a combination of replacement and irritative fibroid changes, and according to the relative extent of one or the other do we obtain either enlargement or contraction of the organ. While where the liver cells undergo primary degeneration and atrophy we obtain characteristically replacement fibrosis with little tendency to contraction but on the contrary with some enlargement of the organ.[1] This replacement fibrosis following upon degeneration of the cells appears to account for a large number of the anomalous and debatable forms of enlarged cirrhotic liver.

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[1] Soc. de Biol. Jan. 25, 1895.

J. G. Adami.

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[1] This enlagement would seem to be due not so much to an excessive development of connective tissue as in part to active proliferation of the liver cells, replacing those that have atrophied, in part to an infiltrated, almost œdematous condition of the new connective tissue. Jaundice may or may not accompany this form. Where it is present it is due, not to obstruction of the larger ducts, but probably as Hunter has suggested in another connection to a catarrhal condition of the bile capillaries and a modification of the excreted bile.

Canadian Medical Literature.

[The editors will be glad to receive any reprints, monographs, etc., by Canadian writers, on medical or allied subjects (including Canadian work published in other countries) for notice in this department of the JOURNAL. Such reprints should preferably be addressed to Dr. Kenneth Cameron 903 Dorchester street, Montreal.]

PERIODICALS.

OCTOBER, 1896.

THE CANADIAN PRACTITIONER.

Some recent developments in Medical Science—Geo. A. Peters, Toronto, p. 709.

The operative treatment of mammary carcinoma—W. Burt, Paris, Ont., p. 722.

THE CANADA LANCET.

Operation for volvulus of the vermiform appendix—F. L. Vaux, New York, p. 59.

Symphyseotomy—Alex. Forin, Duluth, Minn., p. 61.

CANADA MEDICAL RECORD.

Notes of a trip to Jamaica—W. H. Drummond, Montreal, p. 1.

Montreal General Hospital notes—F. W. Campbell, Montreal, p. 4.

THE CANADIAN MEDICAL REVIEW.

Inaugural Address—Toronto Clinical Society—By the President, Dr. Allan Baines, Toronto, p. 93.

The theory of eliminative and antiseptic treatment of typhoid fever—W. B. Thistle, Toronto, p. 97.

Clergyman's sore throat—Price-Brown, Toronto, p. 100.

THE DOMINION MEDICAL MONTHLY AND ONTARIO MEDICAL JOURNAL.

Proceedings at the meeting of the Medical Council of Ontario (continued) p. 369.

THE MARITIME MEDICAL NEWS.

Address in Surgery, at the meeting of Canadian Medical Association, Montreal, Aug. 27th, 1896—John Stewart, Halifax.

L'UNION MÉDICALE DU CANADA.

Le Goitre, son traitement médical et chirurgical—D. Marsil, St. Eustache Que., p. 577.

Traitement de l'éclampsie puerpérale—E. A. René de Cotret, Montreal, (suite et fin), p. 584.

Traitement des affections syphilitiques du globe oculaire par les injections intra-veineuses de cyanure d'hydrargyre—Jehin Prume, Montreal (suite et fin), p. 589.

LA CLINIQUE.

De l'epithelioma de la face, et de son traitement (suite)—Jéhin Prume, Montreal, p. 86.

KINGSTON MEDICAL QUARTERLY.—Vol. 1, No. 1.

Some diseases of bone—D. E. Mundell, p. 5.

Foreign body in right bronchus—W. G. Anglin, p. 10.

Obstetrical and gynæcological notes—R. W. Garrett, p. 13.

Puerperal eclampsia—E. Ryan, p. 17.
Food for infants—I. Wood, p. 21.
Two cases of intraocular hæmorrhage—J. C. Connell, p. 25.
"True" or grave diabetes—pancreatic treatment—D. E. Mundell, p. 28.
Antitoxic treatment of diphtheria—W. T. Connell, p. 29.

MEDICAL NEWS, (OCT. 31ST).

Peripheral Neuritis—Alexander McPhedran, Toronto, p. 485.

NEW YORK MEDICAL JOURNAL, (OCT. 17TH.)

The functional value of cortical cerebral motor centres in different animals—Wesley Mills, Montreal.

(OCT. 31ST.)

On the application of the serum diagnosis of typhoid fever—Wyatt Johnston, Montreal.

NOVEMBER, 1896.

THE CANADIAN PRACTITIONER.

Skin, hair, and nail lesions, produced by the action of "X" rays—E. E. King, Toronto, p. 789.

A report of forty cases of diphtheria treated with antitoxine—A. B. Eadie and T. F. McMahon, Toronto, p. 794.

A note on amputation at the hip-joint in advanced tuberculous disease—A. Primrose, Toronto, p. 799.

THE CANADA LANCET.

A case of septicæmia with endocarditis, complicating gonorrhœa, recovery—H. B. Anderson, Toronto, p. 113.

An appendix abscess perforating the diaphragm, and discharging through a bronchus, also perforating an intercostal space—A. McPhedran, Toronto, p. 115.

CANADA MEDICAL RECORD.

Thrombosis of the petrosal, cavernous and circular sinuses occuring in scarlet fever, and due to acute suppurative otitis media, J. W. Stirling, Montreal, p. 49.

Clinical lecture delivered at the Western Hospital (Department for diseases of the Throat and Nose), G. T. Ross, Montreal, p. 51.

THE CANADIAN MEDICAL REVIEW.

Typhoid fever—W. J. Wilson, Toronto, p. 127.

THE DOMINION MEDICAL MONTHLY AND ONTARIO MEDICAL JOURNAL.

One hundred cases of retroversion of the uterus treated by ventrofixation and Alexander's operation, with subsequent results, A. Lapthorn Smith, Montreal, p. 481.

Appendicitis—Dr. Schooley, Welland, Ont., p. 488.

The differential diagnosis of "Neurasthenia" and its treatment—Elmore S. Pettyjohn, Alma, Mich.

Evisceration of eyeball, with sclero-optic neurectomy—Ernest Hall, Victoria, B.C., p. 495.

A case of fracture of the skull—Hamilton Merritt, St. Catharines, Ont., p. 497.

Prolapse of uterus—Dr. Armour, St. Catherines, Ont.

THE MARITIME MEDICAL NEWS.

Chronic seminal vesiculitis—Foster MacFarlane, St. John, N.B., p. 341.
Puerperal Eclampsia—F. F. Kelly, Charlottetown, P.E.I., p. 352.

L'UNION MÉDICALE DU CANADA.

Le goître, son traitement médical et chirurgical—D. Marsil, St. Eustache, p. 641.

La medecine moderne—E. P. Benoit, Montreal, p. 650.

De l'emploi du sero-diagnostic de Widal, dans la fievre typhoid et de sa mise en pratique dans les laboratoires d'hygiene—Wyatt Johnston, Montreal, p. 661.

Les ecoles veterinaires en Canada—M. F. T. Daubigny, M.V., Montreal, p. 666.

LA CLINIQUE.

De l'épithélioma de la face et de son traitement (suite)—Jehin Prume, Montreal, p. 125.

DECEMBER, 1896.

THE CANADIAN PRACTITIONER.

The serum diagnosis of typhoid—J. J. Mackenzie, Toronto, p. 869.

The better operation for hæmorrhoids—F. L. Vaux, New York, p. 872.

Chairman's address at the tenth annual banquet of the Medical Faculty of the University of Toronto—A. T. McNamara, p. 876.

A report of three cases of post-typhoid neuritis—Geo. J. Preston, Baltimore, p. 882.

THE CANADA LANCET.

A case of cerebellar ataxia—Campbell Meyers, Toronto, p. 167.

A critical view of the modern methods of operating for the cure of inguinal hernia—J. Coplin Stinson, San Francisco, Cal., p. 169.

CANADA MEDICAL RECORD.

Neuralgia of the peripheral nerves, with special reference to that dependent on trauma or degenerative changes—Thomas H. Manley, New York, p. 115.

Faith cures and auto-hypnotism—R. J. Midgley, Montreal, p. 128.

THE CANADIAN MEDICAL REVIEW.

Syphilis and its treatment—A. R. Robinson, New York, p. 159.

THE DOMINION MEDICAL MONTHLY AND ONTARIO MEDICAL JOURNAL.

Tapeworm—A. Bethune, Seaforth, Ont., p. 593.

Report on contagious diseases for the quarter—C. H. J. Chipman, Ottawa p. 600.

The surgical treatment of retro-deviations of the uterus—Augustin H. Goelet, New York, p. 601.

L'UNION MÉDICALE DU CANADA.

La bactériologie, l'hygiène et la mèdecine—E. P. Lachapelle, Montreal, p. 705.

Contrôle des hémorrhagies des voies respiratoires supérieures—H. M. Duhamel, Montreal, p. 712.

Des principales cause d'insuccès dans l'opération qui a pour but la suture du col utèrin—A. L. Smith, Montreal, p. 715.

LA CLINIQUE.

Les bains électriques et la dyspepsie—Adelstan de Martigny, Montreal, p. 174.

La syphilis cause d'avortement—J. A. Ouimet, Valleyfield, Q., p. 182.

THE BRITISH MEDICAL JOURNAL (DEC. 5TH.)

Clinical lecture on operative interference in typhoidal perforation—G. E. Armstrong, Montreal, p. 1621.

Observations on the serum reaction in typhoid fever and experimental cholera by the dried blood method—Wyatt Johnston and D. D. McTaggart, Montreal, p. 1629.

Observations upon the relation between leukæmia and pseudo-leukæmia—C. F. Martin and G. H. Mathewson, Montreal, p. 1634.

Editorial on the sixty-fifth annual meeting of the British Medical Association to be held in Montreal, 1897, (with illustrations), p. 1647.

(DEC. 12.)

Notes on the composition of the blood serum in pernicious anaemia—R. F. Ruttan and J. G. Adami, Montreal, p. 1700.

(DEC. 19.)

The artificial feeding of children—Andrew Macphail, Montreal, p. 1706.

ARCHIVES OF PEDIATRICS.

Notes on a case of insolation in an infant thirteen months old—Henri A. Lafleur, Montreal, p. 908.

Lesions produced by the action of "X" Rays—E. E. King.

An interesting case is reported of a man who, while giving public exhibitions of the "X" rays, was exposed for from two to six and eight hours daily for about eight months. About the middle of the third month the right hand, which had been towards the coil and tube, began to swell, and large blisters accompanied by great pain appeared on the dorsal surface. Treatment by picric acid rendered the hand less susceptible and he continued to use the apparatus. Later on the cheek became swollen and tender on the exposed surface but was not blistered. There was œdema of the eyelids, and conjunctivitis. A metal shield was used without affording any protection and he had to give up the work. In about three weeks the injuries had healed, there being only an amount of tenderness remaining. When seen some time later, the hands were examined and the skin was noticed to be infiltrated, unusually smooth, conjested, and on the left almost entirely free from hair. All the nails were exfoliating, there being two ridges which clearly showed two distinct injuries. The left side of the face showed an entire absence of hair in the region of the temple and for some distance behind the ear; the eyebrows, except a small portion remaining near the nose, the moustache, the whiskers of the cheek, chin and neck, on the left side were almost all gone. That side of the face was nearly smooth and of a very different feeling from the other. There was a subacute conjunctivitis, and he thought that the sight was somewhat impaired.

A Case of Cerebellar Ataxia—Campbell Meyers.

This case, which was exhibited before the members of the Canadian Medical Association at the recent meeting in Montreal, first came under the writer's notice on December 24th, 1895. He was seventeen years old and an only child, and had been attending school regularly. His paternal grandfather died at 75 of diabetes mellitus, his maternal grandmother of consumption, and his maternal grandfather of locomotor ataxia. His mother was of a nervous disposition but otherwise healthy. His father was healthy without any suspicion of specific disease. No trace of a like condition could be found among his relatives.

He was born by the aid of forceps but the labour was not prolonged nor attended by any serious difficulties. He began to walk early, and no defect in his development or health was noticed until he was three years of age, when he began to suffer from diabetes insipidus and which has continued. Five years ago sugar appeared in the urine, in considerable quantity, but disappeared after treatment. Three years ago it was first noticed that his gait was affected and had become steadily worse. His speech, at times, was peculiar. His general health was good. Thirst had always been extreme. Condition on examination showed the patient to be a well developed boy without any noticeable deformity about the head or body. The knee jerks were decidedly increased and there was moderate ankle clonus on both sides, the wrist, elbow and superficial reflexes were very active. Jaw jerk absent. There was no disturbance of sensibility. The gait was uncertain and staggering, the feet being placed widely apart. He could not start to do anything quickly. When attempting to walk he hesitated for a moment, started, walked with uncertainty and turned round with difficulty. His speech was slow and scanning, the separate syllables being all pronounced. Movements of the muscles of the face were slow. Inervation seemed equal on both sides, the muscles did not remain unduly contracted nor were there contractions of any of the skeletai muscles. His movements were awkward and often it was with difficulty he could prevent himself from falling backwards. He had a certain amount of difficulty in bringing his finger tips together when the eyes were closed. He could not stand steadily when his feet were together, nor could he maintain his balance when one foot was placed immediately before the other even with the eyes open, but he at once fell sideways if the eyes were closed. There were no defects in smell, hearing or taste ; urine sp. gr. 1008, pale and clear, no sugar or albumin present ; discs were normal. A chart of the field of vision showed a bilateral contraction in the outer part for white, a more marked concentric contraction for red and decidedly contracted field for green. Central colour sense was good. There was no irregular contraction of the pupils ; no appreciable heterophoria with the phorometer, though the right eye appeared to roll upwards. Slight nystagmus if the eyes were fixed in an upward position.

Reviews and Notices of Books.

A Practical Treatise on Medical Diagnosis.. By J. H. MUSSER M.D. Lea Brothers & Co., Philadelphia. 1896.

The number of books on medical diagnosis is legion, but among them all it has been hard to find one which can satisfactorily fulfil the requirements of the student and busy practitioner. In one, we find elaborate treatises on the physical laws governing auscultation and percussion, instead of practical diagnostic points alone ; in another rather than the essential chemical tests for clinical examinations, the author obliges the reader to cull out of many pages the best and simplest means of chemical diagnosis—while in a third we find the volume so uneven in its quality as to render many chapters practically of no value.

It may truly be said, however, that Dr. Musser's work has overcome all these failings, and that the medical student will find a clear, concise and well arranged text-book, giving all the essential features of medical diagnosis in an admirable style.

The illustrations and charts are excellent, the various chapters admirably subdivided for mental classification, and the tests as given include all that is necessary without burdening one's memory or occupying too much of the reader's time.

The chapter on the bacteriological diagnosis, in which the author has evidently drawn largely upon Abbott, is short and comprehensive. There is perhaps scarcely enough said of the clinical aspects of the typhoid bacillus, and hardly enough insistance on the absolute necessity of a bacteriological examination of cases of tonsillitis as differentiated from those of diphtheria.

The malarial parasite of the tertian variety sporulates within 48 hours, not 4, as stated.

We have looked in vain for numerous names in the index, the insertion of which would give added facility to the reader, though in other respects the whole arrangement is beyond criticism.

The chapter on diagnosis by electrical reaction could not be more clear, though in the synopsis of the various nervous diseases some important symptoms are omitted, while in other places the symptoms are given rather too dogmatically, for example, in the remarks on hereditary ataxia no mention is made of the foot deformities, while it is further said that reflexes are lost, though we do not think this by any means always the case absolutely. More information regarding the stigmata of hysteria with reference to abnormalities would have been acceptable.

All in all, however, the work is the best of its kind yet published, a great improvement on the previous edition and an invaluable aid to the medical student, the general practitioner and the teacher. C. F. M.

Literary Notes.

Mr. W. B. Saunders announces, for early publication, a new book entitled "Anomalies and Curiosities of Medicine." It is the result of several years of work by the editors, Geo. M. Gould and Walter L. Pyle, and is to be a complete encyclopedia and book of reference on the subject. This will make it especially useful to all who are interested in sociological and scientific topics, as cases have been collected from all sources, both ancient and modern. The whole has been carefully indexed so that reference is easy, and foot notes, showing whence the information has been derived, are added.

It promises to be a most complete work, of use to both the physician and surgeon, as well as the specialist, and will merit a careful inspection.

Mr. E. B. Treat announces that the 1897 volume of "The International Medical Annual" will soon be issued. It is a condensation of the principal work done in the medical world during the past year and comprises a review of therapeutics with articles on new remedies and their uses, a dictionary of new treatment giving the latest methods of treatment of various diseases, both medical and surgical, the whole being well illustrated. New instruments and appliances are also figured. The work is so well-known that it has merely to be mentioned to be recommended.

Society Proceedings.

MONTREAL MEDICO-CHIRURGICAL SOCIETY

Stated Meeting, November 9th, 1896.

GEORGE WILKINS, M.D., PRESIDENT, IN THE CHAIR.

Hypoplasia of One Kidney.

Dr. J. G. ADAMI read a paper on this subject, illustrating his remarks by two specimens. Will appear later.

Dr. WYATT JOHNSTON referred to five cases in his experience where there was absence or hypoplasia of one kidney. In one of these the death was due to a rupture of the remaining kidney, and in another the removal of the functionally active kidney was followed by anuria and death.

Serum Diagnosis in Typhoid Fever.

Drs. WYATT JOHNSTON and MACTAGGART communicated the result of three hundred and ninety observations on the serum reaction of typhoid. These were made, partly in hospital cases, and partly in cases when samples were received at the laboratory of the Board of Health of the Province of Quebec. The results obtained were shown in the following table :

Total cases of genuine or suspected typhoid		143
Positive Results.—Decision on first examination. (Of these complete reaction in 112 ; partial reaction, 6. Three of these before the third day)	118	
Doubtful on first examination ; decisive on second examination. (Of these 4 were first examined before sixth day)	5	
Total positive results	123	
Negative Results.—(Decisive cases proved by subsequent history to be something other than typhoid, viz. : meningitis, malaria, pneumonia, constipation, etc.		14
Negative results remaining in doubt.—Mild cases of typhoid first examined during convalescence	3	
Primary examination negative, clinical history typhoid, no re-examination	2	
Severe fever of typhoid type, negative results both by Widal and the dry method (examined three times)	1	
Total negative results in cases of possible typhoid	6	

They considered that about 90 % of successful results could be obtained by the method in public health laboratory work, although typical hospital cases gave a much higher percentage. They had never met with a typical reaction apart from typhoid fever.

Dr. ADAMI congratulated Dr. Johnston on having worked out this simple method of diagnosis in typhoid fever. Although the author of the paper had endeavoured to show that Dunham had been the originator of the serum reaction for typhoid, and that Widal had first popularised it, Dr. Adami thought that Dr. Johnston deserved still greater credit for having devised this simple test which was so generally applicable. It was evident that Widal was wrong in contending that the dried blood was not so good for examination as fluid blood. Without doubt this method would come into general employment in the health offices of cities throughout America and eventually in Europe.

Dr. H. A. LAFLEUR draw the attention of the Society to the great value of the test in differentiating the various febrile conditions grouped under the name of febricula. This term was mainly a cloak for our ignorance, and included among other things a certain number of cases of mild or abortive typhoid. If in any given case of so-called febricula the typhoid reaction of Widal was present, one should be on the watch for a possible relapse and should exercise caution in feeding

Dr. J. B. MCCONNELL thought this an important method of detecting typhoid fever, not only in the earliest stages but in masked forms. Typhoid fever had so many anomalous forms, epidemics varied so much in their character, and difficulties in diagnosis were so frequent, that it certainly was to be regarded as a very great advance. In a few cases which he had sent to Dr. Johnston the diagnosis had been made at once. He had had a case recently in which he found it especially useful, it was a case of supposed malarial fever, but the symptoms also resembled those of typhoid. The patient had been in one of the city hospitals and had been discharged as being better, but he still felt ill and went around until at the end of three weeks he came to the Western Hospital. He had frequent chills and perfect intermissions of fever, some enlargement of the spleen with great depression, but no characteristic spots. An examination of the blood for plasmodia was negative except one slide which gave some evidence of the parasite, and this added to the difficulty of coming to a conclusion. The diazo reaction was present. A positive diagnosis was made by submitting a sample of the blood to Dr. Johnston. The man died, as most cases of ambulatory typhoid do, and the post mortem examination fully confirmed the serum diagnosis of typhoid fever.

Dr. F. G. FINLEY, speaking of the value of this method in cases of so-called febricula, cited a case which was brought into the hospital a few days previously with all the symptoms of typhoid, although they were not pronounced enough to enable him to come to a decision. He submitted a sample of the blood to Dr. Johnston who reported that it gave the reaction.

THE PRESIDENT thought that probably the first case on which Dr. Johnston had tried this reaction had been a patient of his who came to the hospital some time in September, presenting symptoms of typhoid. He had shortly before read an account in the *Progrès Médical* of Dieulafoy's attempt to make a diagnosis by this method.

Dr. JOHNSTON, in reply, said that in his first case the examination had been made at the request of Dr. Wilkins. In mild cases, clinically doubtful and when the reaction was ill marked the corroborative evidence obtained by bacteriological examination of the stools should be very valuable. The dry blood method had appeared to offer certain advantages for public health laboratory work, but was not necessary for hospital work. Dieulafoy had brought Widal's work before the Académie de Médicine, but had not himself modified the technique.

Bacteriological Method of Diagnosis in Leprosy.

Drs. WYATT JOHNSTON and W. H. JAMIESON read a communication on this subject, and exhibited slides illustrating this method. (See page 548.)

Stated Meeting, November 20th, 1896.

J. G. ADAMI, M.D., FIRST VICE–PRESIDENT, IN THE CHAIR.

The Presence of Tubercle Bacilli in Fæces from a Non-Tuberculous Intestine.

Dr. C. F. MARTIN read for Dr. R. B. SHAW and himself a report of this case. (See page 542.)

Dr. GORDON CAMPBELL thought this was an extremely interesting case. When one considered the difficulty often experienced in detecting tubercle bacilli in the stools in cases of tuberculous disease of the intestine, the fact that they had here passed through in sufficient numbers to lead to the diagnosis of that disease seemed remarkable. He asked for more particulars regarding the number found.

Dr. R. B. SHAW, in reply, stated that the bacilli were sufficiently numerous for three to be within the field of the microscope at one time.

Dr. J. G. ADAMI alluded to the fact that mucus was a very insoluble substance and was acted on but slightly by the intestinal juices. This, and the small quantity of fæces passed, were two considerations which favoured the finding of the bacilli in the present case.

Congenital Dilatation of the Colon.

Dr. C. F. MARTIN exhibited specimens from this case and read the report. Will appear later.

Dr. WESLEY MILLS drew attention to the dilatation of the colon sometimes occurring in the insane which he attributed to their inattention and want of regularity in their habits, together with the dulness of their senses. He referred to one case reported by him in a paper on hibernation where the dilatation was evidently produced by accumulation of faecal matter.

Ambulatory Lobar Pneumonia.

Dr. G. G. CAMPBELL reported this case. (See page 551.)

Stated Meeting, December 4th, 1896.

GEORGE WILKINS, M.D., PRESIDENT IN THE CHAIR.

Impetigo Contagiosa.

Dr. G. E. ARMSTRONG reported this case as follows:

This young man was admitted to the Montreal General Hospital on the 12th November, 1896. He is nineteen years of age and single.

This rash is now, as the result of treatment, much less distinct than on admission. It appeared first about six weeks before he was admitted to the hospital. It was first noticed on the lower part of the abdomen, then on the buttocks, afterwards extending to the lower extremities. A little later it appeared on the arms and in the axillae. The back, chest and face have almost entirely escaped. In its geographical distribution then, it does not follow any special order, except that it is most abundant on those parts of the body, most likely to be infected by the patient himself in scratching. It has from the first been intensely itchy. No parasites were found on his body or clothing. He has lived in a rather crowded boarding house, but no other inmates of the house have suffered from any skin disease so far as he knows.

He is a leather cutter by trade, and has generally been in fairly good health. Uses alcohol and tobacco. Has had three attacks of gonorrhœa within the last twelve months, the last attack appearing fifteen days ago. There is no rheumatic or tubercular history.

The rash appears at first as slightly elevated papules which are very itchy, and after the irritation of scratching develop into pustules, and these rupture and form these thick crusts which you see. Several of them may be seen running together. The flexor and extensor surfaces seem to be about equally affected. The glands in the groin and the epitrochlear glands are enlarged. When admitted to the hospital the lower abdomen, buttocks and thighs were one mass of scabs There was also a scab about the middle of the dorsum of the penis.

This case has had added interest in the hospital, from the fact that different views as to its nature have been held by different members of the hospital staff.

On the one hand it is contended that the rash is a syphilide, and the sore on the penis, the primary lesion. Against this theory is the patient's positive and persistent statement that the sore on the penis only appeared two weeks after the rash on the abdomen. Also it may be urged that there is no sore throat or falling of hair.

I have regarded the case as an impetigo, but just what was the source of infection I have nct been able to determine with any degree of certainty. It has, to me, the appearance, of a case of neglected scabies, but no furrows or parasite have been discovered. He is rapidly improving, however, under the daily inunction of sulphur ointment and hot baths. The sites of the crust you notice are red, but hardly can be called copper coloured. I think the case of considerable clinical interest, and shall be glad to bear an expression of opinion from the members as to its nature.

A Series of Cases of Pelvic Hæmatomata.

Drs. **Wm. Gardner** and **C. F. Martin** read a paper on this subject (See page 521.)

Some Points in the Treatment of Potts Disease.

Dr. **C. W. Wilson** read a paper on this subject. To appear later.

Dr. **T. G. Roddick** thought Dr. Wilson had covered the ground very thoroughly and agreed with almost everything he had said in regard to treatment. Mr. Howard Marsh's plan of keeping these cases in a recumbent position, a treatment which had stood the test of seventeen years, Dr. Roddick thought was the most satisfactory of any. With regard to Sayre's jacket he had given it a thorough trial. Having been present in Manchester when Dr. Sayre first demonstrated its use he became very enthusiastic about it and provided himself with this means of treating cases. He now felt that the fixation secured by it was not sufficient to give quite satisfactory results, and he had abandoned it for a modification of Taylor's spring jacket, the great difficulty of which was in getting it made properly.

For the abscesses he felt that aspiration should be practiced once or twice before they were opened, and that injections of iodoform as mentioned by Dr. Wilson were beneficial. For the paralysis which so often occurred he first tried the recumbent treatment and cited a case as evidence of its value.

Dr. **G. E. Armstrong**, referring to the apparatus shown by Dr. Wilson, thought it a very satisfactory one. He had found it no easy matter to keep children quiet in bed. The length of time the apparatus should be worn was an important point. He felt that the children should be kept in bed until the disease had ceased to be progressive, and the process of repair had begun. He had yet to be convinced that the head or shoulders could be adequately supported by any apparatus up to the present devised. A jury mast controlled the movements of the head and neck, but did not support the former. No apparatus that would altogether lift the head and take its weight from diseased cervical vertebræ could be borne for any length of time. The same was pretty much the case with apparatus to support the shoulders in mid-dorsal disease. It controlled movement, but did not carry the shoulders and head.

Bursitis of the Knee.

Dr. R. C. KIRKPATRICK exhibited two enormously hypertrophied bursæ which he had removed from the knees of an elderly woman They had been present for a number of years, but had grown more rapidly of late.

THE

Montreal Medical Journal.

A Monthly Record of the Progress of Medical and Surgical Science.

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BRITISH MEDICAL ASSOCIATION.

Owing to the fact that the meeting of the General Council of the Association has been delayed until January 20th, we are still ignorant of the names of those selected to give the general addresses, and to be office holders in the various sections in the forthcoming meeting. It is quite possible that many of the well-known leaders of our profession in the old country may be unable to visit us, but on the other hand we hear of many prominent members of the profession who have signified their intention of coming, and we trust that the list of office bearers will be such as in point of distinction will compare most favourably with those of previous meetings.

Dr. Roddick, President-Elect, left Montreal on the 1st inst., for England, where he will devote some weeks to the business of the Association. His visit seems to us very well timed; not only will he be able to post the officials of the Association with all necessary information concerning what has been done in Canada, but he will, we trust, be able by personal interviews to secure the attendance and active co-operation of many who are first and foremost in the profession.

As an indication of the hearty co-operation of all parts of the Dominion, we may point out that the following leaders of the profession have accepted positions upon the Executive Committee and have offered their co-operation.

Dr. W. Tobin, President, Halifax Branch British Medical Association.
Dr. G. L. Milne, " British Columbia " " "
Dr. C. R. Church, " Ottawa Branch " " "
Dr. A. Catellier, " Quebec " " " "

Dr. L. J. A. Simard, (Quebec), President College of Physicians and Surgeons, of Quebec.

Dr. A. F. Rogers, (Ottawa), President College of Physicians and Surgeons, Ottawa, Ont.

Dr. J. A. Duncan, President, British Columbia Medical Council.

Dr. J. McLeod, (Charlottetown), President, P. E. I. Medical Board.

The Presidents of the following Medical Associations have joined the Executive:

Dr. V. H. Moore, (Brockville), President, Canadian Medical Association.

Dr. J. W. Daniel, (St. John), President, Maritime Medical Association.

Dr. Coventry, (Windsor,) President, Ontario Medical Association.

Dr. H. H. Chown, (Winnipeg), President, Manitoba Medical Association.

Dr. J. P. McDonald, (Hopewell, N.S.), President, Nova Scotia Medical Society.

D. A. J. McCully, (Moncton, N.S.,) President, New Brunswick Medical Society.

Dr. Page, President of the Provincial Medical Board, Nova Scotia, writes that he will be unable to attend, but that the Board will send a delegate.

There are yet more names to be added to the Executive. In the absence of any official year-book of our profession, the Secretaries have found some difficulty in determining the present holders of official posts in connection with the leading medical bodies of the Dominion, and as a consequence the invitations to join the Executive have been delayed.

With regard to excursions, the G. T. R. and C. P. R. Companies offer to the Association and its guests, journeys at half rates over the whole of their systems as far as Sarnia on the one and Port Arthur on the other, and in addition the C. P. R. will give the same rates to those wishing to cross the continent as for the local excursions, that is, return tickets to Winnipeg or Vancouver for one single fare. This privilege will be extended to Canadian members and American guests.

THE FIRST MEDICAL PEERAGE.

It is with profound satisfaction that all members of our profession must have received the announcement that, among the New Year's Honours, a Peerage has been offered to Sir Joseph Lister. Until now the profession in Great and Greater Britain has always felt that it has not received adequate recognition from the great ones of the earth who have been abundantly ready to testify their appreciation of those dealing death to the enemies of the country, and have been as abundantly chary of honouring those preserving the lives of good Britons.

No one in the Empire has done greater service to humanity than Sir Joseph Lister, and it is most fitting that he should be chosen to be first and foremost to receive this token of honour and appreciation. We are rejoiced that it has come to him, and are only sorry that it did not come long ago, and that it is unaccompanied by a spontaneous offering from the Government and the nation. Surely no one thus honoured has deserved it more.

MEDICAL WRITERS AND PUBLISHERS.

We have received the following letter from Dr. G. M. Gould and, appreciating the valuable work that he has achieved for our profession on this continent, we publish it very willingly, even though while sympathizing with his views, we cannot perhaps entirely accept his argument.

TO THE MEMBERS OF THE MEDICAL PROFESSION.

I would be pleased to have an expression from you, either personally or through some medical journal, as to the relations of the lay publishing firms of medical journals and the profession. The request is suggested by the fact that Messrs. Wm. Wood & Co., of New York, refuse to permit the editors of *The American Year-Book of Medicine and Surgery*, to use in our abstracts of Medical Progress articles and illustrations first printed in the *Medical Record* and the *American Journal of Obstetrics*.

This decision seems to me to be wrong for the following reasons:

1. IT PREVENTS THE DISSEMINATION OF MEDICAL KNOWLEDGE.—*The Year-Book* condenses, systematises, and criticises the year's medical work in a shorter space and more permanent manner than the journals, and has thousands of readers no single journal can claim, or hope to reach. Every physician writes and publishes articles in order that every member of the profession may, if possible, learn of his work, and that science and progress may thus be furthered and humanity benefited. To interfere with such dissemination of our literature in reputable publications is, I think, discourteous and unjust to the profession and an injury to Medical Science.

2. This injustice and injury to Medicine become all the more striking when physicians do not receive a cent of pay for contributions, from the publication of which the lay-publisher is supposed to make considerable financial profit.

3. No other publisher in the world, not even those who pay authors for their contributions, have in the least objected to our reproduction of quotations, abstracts, and illustrations from their journals.

Do you wish to limit the dissemination of your contributions to medical science by such an exclusion of them on the part of publishers from reputable publications? Is this literature the property of yourself and of the profession or not? Does your gift of it to a journal make it the private property of the publishers of that journal? Is it not rather a loan for temporary use only?

Will you not hereafter demand that there be printed with your article a statement that the right of abstracting the text or reproducing illustrations is guaranteed?

Sincerely yours,

GEO. M. GOULD.

119 S. 17th Street, Philadelphia, Pa., Dec. 1896.

As we have already said we cannot but sympathize with Dr. Gould. Undoubtedly, every one of us who writes for the medical press, does desire that what he writes shall obtain the greatest possible publicity, and speaking on behalf of this JOURNAL, we of the Editorial Staff, who are at the same time proprietors of the JOURNAL, may state that so long as the JOURNAL has priority of publication, we are rejoiced when any article appearing in this JOURNAL is published elsewhere, whether in abstract or in its entirety. Being human we would make the proviso, that the fact be always noted that the abstract of the article has already appeared in our pages. We note with pleasure for example, within the last few weeks, that one of the leading Indian Medical Journals published conscientiously every word of one of our retrospects, reproducing even sundry unfortunate typographical errors.

But while thus we are willing to have our articles reproduced with due acknowledgment, we cannot but appreciate as publishers the other side of the question. It is quite true that every physician writes and publishes articles that every member of the profession may if possible learn of his work, but at the same time every author in all subjects writes and publishes with a like end in view, and if we mistake not, the number of authors or writers who obtain adequate remuneration is peculiarly small. In our experience men write to or for the leading and most flourishing journals, medical or otherwise, because by so doing they are likely to reach the greatest number of readers, and thus the publishers of the leading journals who through their business capacity work those journals up to their present high standard have more "say in the matter" than Dr. Gould would seem to admit. Let us suppose for example. that there exists a leading journal in medicine or any other subject, and that another periodical appears upon the market, the object of which is to publish fully the best articles appearing in that and other high class journals, we can well understand that the proprietors of the former should object when they see the possibility of the latter periodical being so well conducted that the reading public may prefer to procure it in place of their own organ and may prefer to have by them a careful selection of all that is best rather than to wade through a collection of what is good, bad and indifferent at more frequent intervals.

While it is true that medical writers work in general for no pay, we cannot, after careful thinking over the matter, see that medical literature is widely separated from other literature. Just as we feel that journals, like the *Review of Reviews*, which subsist by extracting at length all that is best in general literature, are harmful and ought to be suppressed, so do we feel that there should be a limit to the extent of the extracts made by year-books in medicine. Year-books ought not to take the place of journals, they ought merely to publish extracts sufficiently full and sufficiently suggestive to lead those who read them to consult the original articles. There is in this country altogether too great a tendency to subsist upon second-hand matter, and an unwillingness to consult original authorities. The good of the year-book or retrospect is to draw attention to the subject matter of articles, that those articles may be consulted in the original.

If the *American Year-Book of Medicine and Surgery* desires to publish merely careful abstracts of papers, then we cannot sufficiently censure the conduct of Messrs. William Wood & Co. If on the other hand the editors wish to publish verbatim, large portions of important articles, neglecting to print those portions which to them seem unimportant, or again if they want to publish articles *in extenso* without permission of the publishers and without payment to the authors, then in either case we cannot but think that Messrs. William Wood & Co have right on their side. All must depend upon the spirit in which the Editors of the Year-Book conduct their enterprise.

AN INTERNATIONAL CATALOGUE.

While upon this subject of publication of abstracts of medical work we may here call attention to a very important work first introduced to the public, we believe, by Professor Michael Foster, in his address before the International Medical Congress,at Rome, two years ago, and notably furthered by a conference which met in London last July under the auspices of the Royal Society.

All investigators in medical and other branches in science, know how difficult it is to obtain anything like a complete bibliography of the subject or subjects engaging their attention. In Medicine we are perhaps better provided for than in most other subjects, for the Index Medicus is singularly complete so far as regards the titles of papers, notwithstanding, those who have occasion to employ the Index frequently, know that it is far from satisfactory. What is wanted is not merely an index of titles, but an index of contents of papers, and at last it seems as if these may be obtained in some branches at least of Medicine. The conference held in London was attended by delegates from all the leading countries of the world (the Hon. Sir Donald A. Smith, representing Canada).

The following are some of the more important resolutions agreed to:

That it is desirable to compile and publish by means of some international organism, a complete Catalogue of Scientific Literature, arranged according both to subject matter and to authors' names.

That in preparing such a Catalogue regard shall, in the first instance, be had to the requirements of scientific investigators, to the end that these may, by means of the catalogue, find out most easily what has been published concerning any particular subject of enquiry.

That the final edition and the publication of the Catalogue be entrusted to an organism, hereinafter called the Central International Bureau, under the direction of the International Council.

That any country which shall declare its willingness to undertake the task shall be entrusted with the duty of collecting, provisionally classifying, and transmitting to the Central Bureau, in accordance with rules laid down by the International Council, all the entries belonging to the scientific literature of that country.

That in indexing according to subject-matter regard shall be had, not only to the title (of a paper or book), but also to the nature of the contents.

That the Catalogue shall comprise all published original contributions to the branches of science hereinafter mentioned, whether appearing in periodicals or in the publications of societies, or as independent pamphlets, memoirs or books.

That in judging whether a publication is to be considered as a contribution to science suitable for entry in the Catalogue, regard shall be had to its contents, irrespective of the channel through which it is published.

That the Central Bureau shall issue the Catalogue in the form of "slips" or "cards," the details of the cards to be hereinafter determined, and the issue to take place as promptly as possible. Cards corresponding to any one or more branches of science, or to sections of such sciences, shall be supplied separately at the discretion and under the direction of the Central Bureau.

That the Central Bureau shall also issue the Catalogue in book form from time to time, the entries being classified according to the rules to be hereinafter determined.

That the issue in the book form shall be in parts corresponding to the several branches of science, the several parts being supplied separately, at the discretion and under the direction of the Central Bureau.

That a contribution to science for the purposes of the Catalogue be considered to mean a contribution to the mathematical, physical or natural sciences, such as, for example, mathematics, astronomy, physics, chemistry, mineralogy, geology, botany, mathematical and physicial geography, zoology, *anatomy, physiology, general and experimental pathology, experimental psychology and anthropology,* to the exclusion of what are sometimes called the applied sciences—the limits of the several sciences to be determined hereafter.

That English be the language of the two Catalogues, authors names and titles being given only in the original languages except when these belong to a category to be determined by the International Council.

That it is desirable that the Royal Society should be informed at a date not later than January 1st, 1898, what steps (if any) are to be taken, or are likely to be taken, in the countries whose governments are represented at the Conference, towards establishing organisations for the purpose of securing the end had in view in Resolution 16.

That January 1st, 1900, be fixed as the date of the beginning of the Catalogue.

McGILL MEDICAL SOCIETY OF UNDERGRADUATES.

The society meets every alternate Friday during the session. To show the work that the students are doing we publish the programme for the winter term:

FRIDAY, January 8.—1. Paper, "Functional Disorders of the Stomach," A. C. Jost, B.A.; 2. Paper, "Albinism," W. H. Dalpe, B.A.

FRIDAY, January 22.—DEBATE, Resolved, "That Douching is always contra. indicated in Normal Labour," For the affirmative, F. W. E. Wilson, W. T. Pallister; for the negative, J. Barclay, J. J. Roy.

FRIDAY, February 5.—1. Paper, "On Evolution," Martin Powers, B.A.; 2. Paper, "Intestinal Digestion," A. H. Gordon; 3. Paper, "Milk Analysis," W. O. Rose; 4. Exhibition of Pathological Specimens."

FRIDAY, February 19.—1. Paper, "Vascular Compensation," A. Smith, B.A.; 2. Paper, "General Paralysis," F. T. Tooke, B.A.; 3. Paper, "Monstrosities," A. A. Loeb; 4. Reporter's Statement.

FRIDAY, March 5.—1. Paper, "Our Native Poisonous Plants," H. B. Cushing, B.A.; 2. Paper, "Function of the Thyroid," F. N. McNaughton, B. A.; 3. Paper, "Emesis," H. M. Standfield, B.A.

FRIDAY, March 26.—Closing Address, Dr. Blackader.

It reflects the utmost credit on the programme committee, which is composed of the president, Mr. R. J. Midgley '97, the secretary, Mr. W. L. Barlow '98 and Mr. R. Law '99. The society has been in existence for many years but latterly the scope and interest has been much extended. The students themselves supply the various items of the programme and only occasionally is one of the professors brought in to give an address on some special subject.

With the object of stimulating its members to conduct original and research work, the society offers in competition annually a senior and junior prize, each of the value of forty dollars, for the best paper on any subject pertaining to the final and primary branches of the medical curriculum respectively, authors of papers to have full freedom in their choice of subjects. Through the kindness of the Faculty of the College, a committee of Professors will constitute the Examining Board and the prizes will be awarded at the Annual Convocation of the College.

The Western Ophthalmological, Otological, Laryngological and Rhinological Association meets in St. Louis, Mo., the second Thursday and Friday of April, 1897. Physicians desiring to read papers are invited to send Subjects to the Secretary at once. The railroads will give one and one-third fare on the certificate plan. Programmes will be mailed Feb. 1, 1897. The profession are cordially invited to attend. Hal Foster, Secretary, Kansas City, Mo.

The *Journal of Nervous and Mental Disease* announces the following arrangement of the staff for 1897: Editors, Drs. Charles L. Dana, F. X. Dercum, Philip Coombs Knapp, Charles K. Mills, James J. Putnam, W. Allen Starr; Associate Editors, Drs. Philip Merowitz, Wm. G. Spiller; Managing Editor, Dr. Charles Henry Brown, 25 West 45th Street, New York, to whom address all editorial and business communications.

The Chairman of the Committee of Arrangements, Dr. H. A. Hare, for the Semi-Centennial meeting of the American Medical Association to be held in Philadelphia June 1st, 2nd, 3rd and 4th, 1897, acting under the instructions of the General Committee of Arrangements, desires to extend a cordial invitation to such members of the Canadian Medical Association as may be in attendance upon the meeting in Canada to attend and take part in this meeting of the American Medical Association.

The following has been sent to us from New York showing the deadly perils which beset life across the border:

SELF-PROTECTION IN BOSTON.—A man of genteel breeding and intellectual force told us the other day that he wears sewed to his undershirt a card with this inscription "My appendix has been cut out." And he gave this reason for his action: "You see, these are the palmy knifing days of the surgeon. If a man falls in a fit or faints, or is disguised mentally by a drug, and is carried consequently to a hospital, the surgeon operates on him for appendicitis without delay."—*From the Boston Journal.*

NEW BOOKS, ETC., RECEIVED AND NOTED.

Ophthalmic Operations as Practiced on Animals Eyes. By Clarence A. Veasey, A.M., M.D., Philadelphia: The Edwards & Docker Co.

The Practice of Medicine. By James Tyson, M.D., Philadelphia; P. Blakiston, Son & Co.

A Plea for Conservative Oral Surgery, with Practical Illustrations. By G. Lenox Curtis, M.D. Reprint from the N. Y. Medical Journal.

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Original Communications.

PERFORATING TYPHOID ULCER.[1]

REPORT OF A CASE

BY

GEO. E. ARMSTRONG, M.D.

Associate Professor of Clinical Surgery in McGill University; Surgeon to the Montreal General Hospital: Attending Surgeon to the Western Hospital.

I regret that Dr. Johnston has had an opportunity of presenting this specimen before the Society. It is from the patient referred to as doing well, in the clinical lecture which I delivered at the Montreal General Hospital, and which was published in the *British Medical Journal.*

The patient, E. N., aged 28 years, was admitted to the Montreal General Hospital under the care of Dr. Finley. According to the man's own statement he had been ill only three or four days before admission. His temperature was very high, reaching 104° F. and 104.5° each day. Baths lowered the temperature but in a couple of hours it would again reach the point recorded before the bath was given. The perforation occurred on the seventh day after admission to hospital and so far as could be learned, on the tenth day of his illness. The pain at the time of perforation occurred suddenly but was not severe. It was relieved by hot fomentations. The point of greatest tenderness was in the region of the right iliac fossa, and rapidly spread over the abdomen. The temperature was not lowered more than two degrees and the pulse not markedly accelerated.

I operated eighteen hours after the perforation had occurred. The perforation was found without difficulty or delay. It was only partially closed by the adhesion of a tag of omentum, the abdomen contained gas emitting a fæcal odour, and yellowish fæcal looking fluid and serum and sero-purulent liquid. The opening in the ileum was closed by a double row of Lembert sutures and the abdomen washed out with hot sterilised normal saline solution, Free drainage was provided by strips of iodoform gauze introduced in all directions between the coils of intestines and a large glass open ended drainage tube passed down to the bottom of the pelvis.

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[1] Read before the Montreal Medico-Chirurgical Society, December 9th, 1896.

The progress of the case during the three weeks following the closure of the perforation was, on the whole, very satisfactory. The clinical aspect of the case was that of a severe typhoid. The course of the disease did not seem to be altered by the operation.

On the 24th day after operation a second perforation of the ileum occurred. The perforation could be seen through the abdominal incision. The almost complete absence of reparative power was very noticeable. When the stitches uniting the edges of the abdominal incision were removed, the incision gaped open to almost its full extent. This misfortune was good-fortune in this respect, that it enabled one to see the second perforation as soon as it occurred and to provide free exit for all matter running out from the bowel.

Four days later a third perforation occurred, together with a very considerable loss of blood. This last opening could also be seen. From this time the patient began to lose ground, and he died on the fortieth day after the operation for closure of the first perforation.

At the autopsy performed by Dr. Wyatt Johnston, the site of the first perforation was found. The closure was complete and there had evidently been no further leakage from that point. The fæcal matters escaping from the subsequent perforations had lighted up a septic peritonitis in the lower abdominal zone, and although the greatest care had been taken during life to keep the pelvic cavity clean, a certain amount of fæcal matter had found its way into Douglas pouch. There was found also a small abscess in the mesentery, Typhoid ulcerations were still present in the lower ileum and colon, showing the long continuance and severity of the original poison. Although this case must go on record as another failure in attempting to treat successfully by operation, a typhoid perforation, yet I think it may be fairly claimed that, had the second and third perforations not occurred, this patient would in all probability |have recovered. When a patient makes satisfactory progress for four weeks after an operation for the closure of a typhoid perforation, the surgical treatment of the condition for which it was undertaken can hardly be called a failure. On the contrary, I feel more encouraged to try again. The statistics show that, including some cases where the diagnosis was doubtful there have been 30 operations for the closure of typhoid perforations, with six recoveries; but if only those cases are included in which there was no doubt as to the diagnosis, and counting only early laparotomies we have 23 operations with three recoveries. A debatable question is: Is typhoid perforation always fatal if left alone or treated medically? And this gives rise to another question, May we sometimes have a localized peritonitis due to infection of the peritoneum at the base of a typhoid ulcer without the occurrence of actual perforation?

Certain it is that recovery sometimes does follow the occurrence of symptoms which are thought by different observers to indicate perforation. In some of these cases, the symptoms of perforation are followed by abscess and five cases are reported of recovery following the incision and evacuation of localized collections of pus, weeks after symptoms of perforation had been noted. What about recovery following after signs of typhoid perforation and without the formation of abscess? Judging from what we have learned concerning a somewhat similar condition, appendicitis, it seems reasonable to conclude that typhoid ulcers may cause inflammation of the peritoneum covering their base, without perforation, or when adhesions to adjacent tissues occur early, an abscess may result from a small perforation, without the setting up of a general septic peritonitis. This would be more likely to occur in typhoid ulceration of the appendix vermiformis, than of the ileum, on account of its constant changing of position during peristalsis.

Again geographical, position may determine the subsequent course of events, as for instance, in the case of a typhoid perforation of the colon, the infection might be extra peritoneal, and abscess would then be the natural sequel.

What then is the duty of the physician and surgeon when called to deal with symptoms of typhoid perforation. I think unquestionably more lives will be saved by operation than by any other method of treatment. If it is found that the condition is localized, so much the better for the patient. If intestinal contents are escaping into the general peritoneal cavity, then certainly, closure of the opening and cleansing of the peritoneal cavity give the patient the only possible chance of recovery. Only when the symptoms point to a perforation of the colon would one be justified in advising delay.

The operation should not be performed while 'the patient is in a condition of shock, but the sooner after the reaction is established the better.

I believe that once the diagnosis is made, a hypodermic injection of morphia is good treatment. It lessens the pain, quiets the nervous system, and most important of all, it arrests peristalsis and by so doing limits the spreading about of the septic faecal matter. One must, however, not be misled by the apparently comfortable condition of the patient, due to the morphia and be persuaded to delay operation.

The perforation is best closed by a double row of Lembert sutures. The abdominal cavity must be thoroughly cleansed. This is best accomplished by irrigation, using a soft rubber tube which can be carried into either loin or into the pelvis, the return flow washing out the septic matter. Any attempt to wash out the peritoneal cavity with a pitcher will result in miserable failure. The stream from the pitcher will not enter far enough to accomplish the object desired.

Sterilized normal saline solution ($\frac{6}{10}$ of one per cent.) seems to answer very well. It cleanses as well as any fluid, and is non-irritating and does not injure the epithelial coverings of the peritoneum. It is important that this should remain functionally active. Thorough drainage should be established from either loin and from among the intestines. This is well accomplished by introducing strips of iodoform gauze, and a large rubber or glass tube long enough to reach the bottom of Douglas pouch, surrounded by strips of iodoform gauze is very efficient.

The dressings need to be very frequently changed during the first 24 or 48 hours, and for this purpose a nurse who fully appreciates the principles of antiseptic surgery and can be trusted to carry them out in every detail is essential. Although the results so far are anything but satisfactory, the surgical treatment of this condition is based on sound principles and it is to be hoped that better results will be obtained in the future than have been in the past.

A CASE OF UMBILICAL FISTULA WITH PROLAPSE OF THE INTESTINE.

BY

C. M. B. CORNELL, M.D., Brockville, Ont.

The following case illustrates the necessity for careful inspection of the umbilical structures of the new-born.

F. R., the third child of the household, was born on the evening of October, 28th, 1896, the mother's labour being devoid of unpleasant event or complication. The future F. was a well-nourished boy of six and a half pounds and free from any gross malformations or deformities. The funis was somewhat excessive in size, the unusual dimensions not being confined to the fœtal insertion and its vicinity, but general, embracing the entire length of the cord. After removing considerable Wharton's jelly without traction on the umbilicus or abdominal wall, or injury thereto, the structure was not of phenomenal proportions. Examination showing the presence of no viscus, I doubted the occurrence of *hernia funiculi umbilicalis,* nor had I reason subsequently to believe there was hernia into the umbilical cord. Neither was I, after careful inspection, thoroughly convinced that there was arrested development of the abdominal wall. The funic and placental course and distribution of the vessels were not such as to confer the property of a velamentous insertion. Some of the foregoing declarations may at first seem incompatible with that which follows, but such was the case as it appeared to me after careful consideration of the conditions obtaining, a due sense of the probability of there being some grave departure from the normal rescuing the examination from negligence in the exercise of cautious investigation.

The cord received the customary dry aseptic treatment after ligation and division. The nurse, a woman of considerable experience in the puerperal chamber, shortly directed my attention to the fact that the navel-string was not undergoing the usual process of dessiccation and that the dressings were always moist. Inspection disclosed an unsatisfactory condition of the cord, with considerable suppuration at the cutaneous junction. Under careful cleansing and strict antiseptic treatment, the condition speedily improved and the remnant was detached on the eleventh day. The umbilical cicatrix itself *appeared* normal to the eye, and although the use of the probe as a crucial test was not made, belief in the absence of any orifice at this point was accepted in view of there being no demonstration of its presence To the left was a narrow crescent of reddish tinge, presenting no evidence of communication with the abdominal cavity and affording the appearance of a healthy sore with every intention of speedy obliteration by granulation. Slight infection had been manifested by the occurrence of mild jaundice which quickly subsided without prejudicing the boy's continued nourishment and growth.

On the evening of November 19th, a message was sent to my house requesting my presence at the cradleside of F., who was then 22 days old. Upon my arrival at 8.30, the mother informed me there was nothing unusual observed about the child's navel in the morning, the dressings had never shown fæcal contents, there had been no evidence of pain on the part of the infant, the bowels had moved without extraneous solicitation, there had been no ejection of the contents of the stomach aside from the easy regurgitation incident to overfeeding. Whilst changing the diaper during the day she observed the clothing to be damp, and eventually stripping the babe to discover the cause, "a red bleeding lump was found on the belly." Examination revealed the presence of a livid mass on the external abdominal wall, which was blood-stained. My first impression was that there had been no recession of the viscera whose normal home is the right iliac fossa and its neighbourhood, the proportions, contour and physical characters of the presenting object leading me to think that the vermiform appendix, caecum and part of the ileum had escaped from the abdominal cavity at the site of the umbilicus. The protuding viscus was barren of sac or integumentary covering and had been freely manipulated by hands innocent of attempt at sterilization, on the part of those ignorant, of course, of the impropriety of this method of appeasing their curiosity. Being at the moment unprepared for the contingency confronting me, the bowel was carefully cleansed and enveloped in gauze moistened with euthymol, this constituting the only measure available at the time. The parents were directed to lose no time in conveying the child to St. Vincent de Paul's Hospital, a proposed arrangement to the execution of which they consented without the necessity of argument on my part. On the arrival of the little patient, I had, in conjunction with my friend, Dr. R. A. Bowie, preliminaries completed for more intelligently dealing with the case, the usual preparations for an aseptic operation having been made. On removing the temporary dressing it was observed that within one and one half hour the prolapsed intestine had increased one hundred *per cent.* in volume. The abdominal wall having been asepticised, the visceral protrusion rendered surgically clean, the operation field and surroundings properly protected and isolated from unsterile contact, the armamentarium, and hands and arms of participants sterilised, &c., a more leisurely examination was conducted before attempting taxis in the event of conditions requiring previous rectification, the boy having been submitted to chloroform narcosis. Investigation demonstrated prolapse of invaginated intestine in the vicinity of the umbilicus. The intussusception was both ascending and descending, the gut above and the gut below being received into and ensheathed by the distended mass which had the appearance previously mentioned. It was found that the umbilicus was intimately adherent to the gut throughout two-thirds of its extent and that the viscus had not escaped through the navel, but at the point indicated by the above-mentioned narrow red crescent, which was situate to the left of the omphalic cicatrix. There had at no time been a flow of fæces at this point, nor had the contents of the bowel ever discharged through the navel, but a moment's use of the probe disclosed a communication between the umbilicus and the intestinal canal. It is unnecessary to explain that the umbilico-intestinal fistula represented the vitelline duct, which connects the vitelline vesicle with the alimentary canal in the fœtus, and which is normally obliterated about the end of the second month of ante-natel life ; in this child the process had failed to occur and the *ductus omphalo-entericus* remained an open canal. The diversion of the fæcal current from the canal may be explained by the apposition of the lateral aspects of the umbilical cicatrix, the geniculation of the adherent gut and the fact that the baby's life was singularly free from the perturbating influences which induce increased abdominal pressure. The avenue of escape for the prolapsed gut was afforded by the narrow crescent, which really marked a point of arrested development of the abdominal wall.

The exercise of patience and careful effort enabled us to liberate the intussusceptus from the grasp of the intussuscipiens at either end without serious damage to the entering, returning or receiving layer of gut, the soft adhesions at the point of contact between the superior and the inferior segment of invaginated intestine within the ensheathing bowel being easily disposed of. The reduced gut was eight inches in length, and after release from constriction and under the influence of hot sterilised normal-salt solution soon presented an appearance justifying our confidence in its continued vitality. The umbilicus was carefully dissected from the intestine and the already inaugurated procedure of omphalectomy completed. The abdominal cavity being still shut off by the proper disposition of hot moist aseptic gauze, the extra-peritoneal segment of intestine was again treated in a manner to insure its asepticity, its lumen being previously emptied and cleansed. Hydrogen peroxide was then introduced in either direction through the opening left by the unclosed omphalo-enteric duct for the double purpose of demonstrating the patency of the intestinal canal and for securing cleanliness of parts to be involved in further procedures. (The hydrogen peroxide also serves as a ready test for the security of the stitch line when compression is removed from the gut). The bowel was again irrigated with hot normal-salt solution, my associate maintaining closure of the gut by digital compression at the proper distance on either side of the orifice. The opening was closed by Lembert sutures of sterilised horse hair, a material which for two years we have used in enterorrhaphy to the exclusion of all else, and with the happiest results. The mesentery was held up against the light, and by the exercise of alternate pressure and relaxation on its vessels, the integrity of the circulation in this important structure was shown Again cleansing the extruded parts, the opening in the abdominal wall was incised in an upward and a downward direction and the repaired bowel was returned to the peritoneal cavity. The latter was washed out with 15-vol. solution of hydrogen peroxide (something experience has taught us *not* to hesitate to do) the margins of the defect in the abdominal wall were freshened and incisions united with through-and-through silkworm-gut sutures, without drainage. The usual aseptic dressing was applied, the baby rolled in a hot blanket and put to bed, having borne the operation well and suffering no after-shock.

Nov. 20.—No movement of the bowels; no urination; no evidence of pain; no rigidity; vomiting not in excess of expectations and not of a character to excite anxiety.

Nov. 21.—A M.—Patient passed the night in comfort, volunteering no obtrusive manifestation of dissatisfaction with the situation. Spontaneous urination and defaecation reported by nurse. Vomiting subsiding; no tympanites; no rigidity; pulse and temperature undisturbed; *facies* normal and composed.

P.M—Two copious movements; free diuresis; vomits only after the breast; general condition satisfactory.

Nov. 22.—Bowels have moved twice. Progressing favourably.

Nov. 23.—No unfavourable symptoms. Abundant evacuations.

The stereotyped phrase, "the recovery was uneventful," applies to the further progress of the case. The dressings were changed on the 26th, when the wound was found healed throughout. On the twenty-second day the sutures were removed and the patient, although destitute of a navel, continues to grow at a rate which promises development into a sturdy youth.

SOME POINTS IN THE TREATMENT OF POTTS' DISEASE.

BY

CHARLES W. WILSON, M.D., M.R.C.S., Eng.,
Assistant Surgeon, Montreal General Hospital.

The points which one must consider in treating Potts' disease of the spine are: first, its tuberculous nature, demanding attention to the general health, requiring supporting agents and such remedies as are used in tuberculous affections of other parts of the body, such as Cod Liver Oil, Iron, etc.; and secondly, its local treatment directed to the bones and soft parts forming the spine itself. One should be familar with the construction of the spine, and especially its physiology, to early diagnose this affection, when best results can be obtained. The causes and extent of deformity and complications should also be known in order to forestall their occurrence.

The spine is a column which must maintain the body erect, and yet must be flexible to accommodate the body to the different positions desired; it maintains its equilibrium in a healthy state through force of gravity. When a part of it becomes diseased, its function is interfered with, and the functions of other parts in relation to it are also altered. It is necessary, therefore, to consider the alterations which take place in the spine, in the progress of this disease; the ulceration or destruction beginning in the anterior portion of the body of the vertebra or the intervertebral substance, or both, and extending posteriorly, though but rarely affecting the arches or transverse processes, and resulting in a collapse of the column after excavation of the diseased part, and the falling forwards of the spine above the point of disease, because of the loss of substance and weakening of the part. This is increased by the weight of the trunk and head and shoulders, above the area of disease. Thus, to prevent deformity should be one of our main objects, and at the same time to relieve pain and discomfort, which is usually due to pressure upon the nerves at their emergence from the intervertebral foraminæ, either through distortion of their canals or by inflammatory products deposited about them.

As in tuberculous disease of other parts, our first endeavor is to secure rest; to restrain motion by fixation, and to protect the parts from injury, by supporting the superincumbent weight of the body, thus removing the cause of injury, which is usually the increased

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Read before the Montreal Medico-Chirurgical Society, December 4, 1896.

pressure upon an already diseased part, as well as the jars the spine has to be submit to in ordinary locomotion. The course of the disease is a long one and will tax the patience of both patient and surgeon but the results that can be obtained by thorough treatment are so strikingly successful in the large majority of cases, that it is demanded of one, to follow them up closely and properly to look after them. Treatment also will depend upon the condition in life of the patient, his surroundings, and his general health, whether the constitutional or the local symptoms are more grave.

Most cases are brought to us in a stage of commencing deformity; the subjective symptoms that precede this condition such as pain, muscular stiffness, peculiarity of gait or attitude do not determine much in the eyes of the laity; colic, growing pains, lumbago, effects of a bad cold, rheumatism are their diagnoses, and it is expected these troubles will pass off, and not until a knuckle is formed, and is observed (and this may be a considerable time afterward) is relief sought. Treatment directed to the prevention of deformity is more important in youth, as these patients lives are rarely sacrificed if support and protection is afforded them. In adults the general health is the more important feature. The degree of deformity is usually looked upon as the indication for treatment, and not the preservation of life or avoidance of the dangers which may arise from severe deformity displacing and compressing vital organs.

The location of the disease will usually determine the amount of deformity. In 200 cases at the Hospital for ruptured and crippled, New York, 7 per cent. only were without angular deformity or right angled deformity as Whitman terms it. Where the greater curves normally are, the deformity is apt to be more marked. Compensatory curves are formed in the opposite direction to maintain the figure erect (illustration). Local treatment, therefore, must be devoted to preventing this condition (of deformity), as well as relieving pain and fixing the spine, keeping it at rest, so that the efforts to repair, which are present in these cases of osteitis, may be aided.

In the cervical region the usual deformity is the bending forward of the head or chin upon the chest, the collapse of the vertebræ and angular curvature being concealed by the overhanging occiput and thick neck muscles, usually in a state of spasm. Early diagnosis is possible here, from the acuteness and prominence of symptoms, fixity, wry neck, etc. In the upper and mid-dorsal regions the deformity is usually great, unless means are taken to prevent it—to keep the upper part of the body from bending forward, to restrain unnecessary movements of the arms and shoulders; this is well done by Whitman's cup attachment to the Taylor brace, or by Taylor's chest piece, which not only controls this feature but also keeps the chest from callapsing and prevents falling together of the shoulders. In mid-spine, buckling like a closing knife will take place unless prevented, and the typical hump back be produced—head down between the squared and apparently elevated shoulders, dwarfing and marked deformity of back and anterior chest wall. In the lower spine, on account of its construction, deformity is not so marked. The bodies of the vertebræ being large and only a part, as a rule, being diseased, they support themselves unless the disease is very extensive, when great deformity is possible. In this situation we have the more unfavourable symptoms of psoas contraction and abscess to deal with; these however may disappear altogether with absolute rest and traction.

Rest and fixation fulfil all the mechanical requirements of treatment. Schapps says that physiological rest is only possible in the recumbent position and that this position should be maintained in acute disease, with or without traction to modify the pressure of the vertebral bodies—later in the course of the disease, he uses his own brace. Recumbency is incomplete in itself, when the body is changed to the erect position a brace will be necessary for complete cure. In recumbency the superincumbent weight is removed. The spine is not called upon to support the body and it is not exposed to jars and overfatigue. Potts, who first wrote of this disease, which has been named after him, in 1771, was opposed to all mechanical treatment, that is the mechanical treatment of that time, which proposed to force the bones apart when anchylosed, and to prevent the spine segments coming together when the intervening bodies were excavated and destroyed. He favored recumbency and counter irritation only. Bonnet also early recognised the futility and bad practice of pulling the bones asunder and devised his wire cuirass to assist recumbency. The value of recumbent treatment is indicated in cervical cases for the relief of pain and discomfort, because the head can be fixed, thus lessening the danger of abscess, preventing dislocation and deformity, and checking the disease before the function of the part is gone. In upper dorsal cases, because deformity in this region is difficult to control and the attitude may be faulty. In middle dorsal to relieve the grunting respiration and faulty attitude, pain and weakness—and in the lumbar region, where psoas contraction makes the erect position difficult or impossible to maintain. Recumbency is therefore necessary for best results. The method ordinarily in use at the Montreal General Hospital, is the procuring of a firm wire bed, with a thick mattress that will not sag, then a steel frame, first devised by Bradford of Boston, I believe, light and rigid and large enough to extend beyond the contour of the body. This is covered with canvas laced tightly on, in two parts, with a space between, to allow the ordinary functions of nature to be carried out without disturbing the patient's position, and to support the weight of the body when the frame is shifted or moved. The patient is laid upon this and kept quiet and in the same position by shoulder straps which come up through the axilla and over the shoulder and are secured to the frame; a pelvic band also is useful for children. The frame and all is lifted, and the bed pan placed in under when required; the patient can be moved from one bed to another, or one room to another and even outside when desired, upon a rolling chair or wagon, without disturbing the spine. For cervical disease, a head extension, in the form of a horseshoe is made, and this is also covered with canvas. Traction can be carried out by gravity or weights. Securing the head by a headstall and attaching it to an upright secured to the head piece and then raising the head of the bed, or by using a weight and pulley to the head and an attachment secured by a pelvic band at the foot of the apparatus (illustrated). Fixed jackets and braces can be worn with this apparatus if desired, and they often are advisable. Amongst the poor it is difficult to carry out recumbency properly—the materials might be procured, but constant watchfulness is necessary and it is difficult if not impossible for them to remain in bed if at all able to get about. We must therefore adopt some ambulatory method of treatment, something that will not confine the patient to the house, and make an invalid of him. We must fix the spine as well as possible, and so we resort to jackets and braces. The propped up waists of earlier times, high bodices, afterwards stays, and now corsets, first suggested the value of the jacket treatment—persons having this disease deriving so much comfort from the strapping up (fixation).

In 1815, LeVacher produced a strong corset of canvas, stiffened with steel ribs, and a jury mast very much like Sayre's of today. This was introduced to America by Gibson in 1824. In 1696, Von Nuck devised a suspension apparatus similar in principle to the Sayre's swing. In 1700, Heister produced an antero-posterior brace very similar to the Taylor brace, so that the use of modern apparatus is not recent.

In fixative apparatus, Phelps says, "The plaster of Paris jacket devised by Sayre of New York, is one of the best supports, to be used in Pott's disease, that the world has ever seen. While it has many defects and demerits its good qualities will more than overbalance its bad, and because of this, and because its application is based upon accurate scientific principles I give it my most hearty indorsement."

Proper application and rapid setting of the plaster is necessary. The best material to use is a starch sized crinoline or muslin, cut in five yard lengths, and three to four inches wide. In this plaster is rubbed or the crinoline is drawn through a box containing plaster of Paris (White's dental is the best) and rolled loosely. A small woven shirt of cotton or wool is drawn upon the patient. (stockinette is also used), drawn tight and secured, that no wrinkles may be present, and all bony prominences, be they spines or deformities, are padded. For this purpose I use now this thick felt, it is soft, slightly compressible and highly absorbent of perspiration. If the spines are not prominent one strip laid along the top of them is all that is necessary. If there is a prominent knuckle, then the padding had better be built up in such a manner that the transverse processes take the pressure, and a space is left between for the spinous processes. The edges of the felt will be exposed so that all may be secured by the plaster. Now, the patient is suspended in a Sayre's swing or suspension apparatus until the weight above the point of disease is removed and extension of the spine effected. The patient's heels may just be raised from the stool or he may be raised until a sense of comfort and freedom of pain is produced. Then the jacket can be applied. The patient steadies himself by holding a pair of straps from the cross bar. The axillary straps are not important and may be left off, as the shoulder is quite movable and no fixation is secured through them. Dinner pads are not often necessary.

The plaster bandages, after being well soaked in water to which a small quantity of salt has been added, being left at the bottom of the pail until all the bubbling has stopped, are squeezed free of superfluous water, and applied layer upon layer, from below upwards. The jacket, to be of greatest usefulness, must be solid at the fulcrum, which will be at the back in the region of the deformity, in most cases in which jackets are applied, and brought up as high as possible in front to the emergence of the neck, and at the bottom to just below the anterior superior spines, but high enough to escape the genitalia. It should be worked in while soft along the iliac crests, as it is these that really support the jacket from below. This gives one the greatest leverage obtainable through length of front, besides best fixation for the chests for it is accurately fitted over as great an area as possible. An ordinary sharp pruning knife is the best thing to cut out or trim a jacket with. Secure freedom for the arms and do not limit the thigh motion. Then you will have a jacket that fits and is comfortable. It is not necessary or advisable to use dry plaster in addition, or polish a jacket. It interferes with ventilation. A jacket of ordinary bandages, that is bandages holding a fair amount of plaster wet to a creamy consistency and well rubbed together, makes a lighter, stiffer and more porous affair than one upon which dry plaster is applied. The long shirt can be brought up over the jacket and stitched above to keep it clean. If a corset is desired this jacket can be split down the front with a knife, removed carefully, bandaged, dried and leather with lacing hooks attached. The solid jackets are better in dispensary work than corsets as they cannot be removed by curious parents and friends, and the support desired be interfered with by faulty reapplication. For young children the hammock method is necessary for application of a jacket. There are several devices but that which I use is simply taking a strip of cotton, one-half the body in width, swing between two chairs. made tense and torn down to accomodate arms and head, the persons seated upon the chairs making gentle extension by head and heels of the patient, lying prone in the swing. The bandages are run on over everything.

Jackets are also made of paper like that which is used in the manufacture of paper racing sculls, and pulp compressed, the same as is used for printers' matrices, such is that. devised by Dr. Weigel, Rochester. Paper in strips laid on regularly, pine shavings and glue, a Russian method, the wood corset of Dr. Waltuck, Odessa; leather, rawhide, felt, brass, aluminium jackets are also used, the last, the suggestion of Dr. Phelps of New York. All these require to be made upon a cast of the body, which must be taken or made by the application of a plaster form or mould first, and then made from this by filling it with soft plaster of Paris. Much material may be economized by putting a block of wood in the middle of your cast.

Jackets certainly are the best means of treatment where lateral deviation is present. If this is not marked however, it disappears sometimes with the antero-posterior brace of Taylor. Where great deformity obtains the jacket is demanded. Howard Marsh and other English surgeons are very doubtful of the utility of the plaster jackets, and favour recumbency for long periods, eighteen months or longer, but advise the use of Cocking's poroplastic jacket as a good addition. They charge many disadvantages to the plaster jacket; the parts being beyond observation, the inability to watch accurately the course of treatment, the retention of perspiration, vermin breeding, retarding of growth and interference with respiration—the tendency to loosening and lack of proper support, and even the suspension in applying them being dangerous. They maintain that instead of patients going down hill they actually improve in general health by recumbency and confinement, and prove it by many examples. Most of the objections to plaster of Paris Jackets can be gotten over by a little care and attention and if properly applied they fulfil almost all requirements, and are the readiest, cheapest and best means we have for dispensary practice at any rate.

Weir Mitchell, speaking of suspension, says it will slowly lessen the curve and that there is a replacement of tissues. That is more than the originator of the method of treatment even claimed for it (Sayre). Suspension will alter the physiological curves, but the diseased part is early held by muscular spasm in a state of rigidity, splinted as it were, and later by bony buttresses or inflammatory infiltration in a position of fixity—nature's fixation. Any disturbance of this would not be good treatment. Suspension no doubt relieves the intra-vertebral pressure, but is inefficient in itself, as it can be applied only part of the time. Plaster can be carried beyond the shoulders and up over the head if desired, will give support to three or four more vertebræ, but this casing is usually hot and uncomfortable. Sayre's head spring or jury mast, Taylor's chin support and Shaffer's chin support can all be attached to the ordinary jacket or a light brace and are much more comfortable. The Davis' head support is also used. These are necessary for high up disease, above the fourth, indeed the seventh dorsal. I hold Thomas' collar, Burrell's wire collar, the shaped wire with tin chin support, the croquet hoop are also used but are inefficient.

Below the fourth dorsal, the jacket or spinal brace or Taylor's antero-posterior brace is the best arrangement when it can be properly applied and kept in order; it must fit absolutely. Fayette Taylor claims the recession of deformity by this method in nine cases presented by him. This is the Taylor brace, (illustrated) two steel uprights, extending from the level of the spine of the scapula to the pelvic band, or as in Taylor's original brace, to an inverted U., arranged at the lower portion with pads upon the buttocks, and his original brace also had a posterior hinge in the uprights, at the level of the deformity. Pads of wood shaped or vulcanite are attached to the upright bars applied on either side of the spinous processes, taking in or supporting and fitting accurately the whole length of the deformity. Extensions are added above to go over the shoulders and carry the shoulder straps, or chest piece devised by Dr. Taylor, also, these triangularly shaped pads with an adjusting connection). An apron to cover the whole front of the chest and secured to the brace by webbing and buckles to cross bars, etc., is attached to the brace, to stiffen and steady it.

Schapps provides an iron frame support to the front chest, connected by straps to the posterior bars.

Chance, of London, also has devised a good brace, and Dr. Knight, of New York, a light frame apparatus, with side uprights, not so efficient as the Taylor, but a very good canvalescent brace.

The plaster jacket provides general support for the trunk as a whole, solid at sides, front and back, but is less accurately adjustable than the brace. Again, I must impress upon you the necessity of braces being accurately fitted and their being perfectly rigid, not giving or bending with weight or wear.

The brace may be made by any blacksmith, but its construction and application must be fully understood by the surgeon. It must be measured and made for each case individually ; you cannot buy it by name or ready made. Often braces are supplied which resemble this, but fit badly and are of no use. Often the uprights are of tempered steel and are too flexible, furnishing no fixation. This I found in one of my cases at the Montreal General Hospital. The brace is fitted by two wrenches or keys, and requires care and some trouble to do it properly. The brace must be daily applied with care by the parents and the patient watched that the straps are kept constantly tight. Look after the skin of the back to avoid chafing Prevent it by alcohol rubbing and Talc powdering in hot weather.

Whitman improves the Taylor brace in efficiency by attaching shoulder caps and providing backward traction ; thus increasing the leverage of the brace.

The object of mechanical treatment is to free the spine from the influence of local deformity, and from the deforming tendency of the disease and its complications, and to distribute compensation. The test of an appliance is its efficiency to meet these indications. The test of the treatment is the effect upon the patient. (Whitman).

Abscess occurs in one out of five patients, as we get them late in the course of the disease, and its liability increases from the upper to the lower regions of the spine. W. R. Townsend gives statistics, cervical, 8 p.c. ; dorsal, 20 p.c. ; lumbar, 72 p.c., of abscess cases. In cervical disease they can be found early, as they must come forward, spread laterally or go through posteriorly. In the dorsal region they may burrow anywhere. Lumbar and iliac abscess are most dangerous from possibility of rupture internally. They sometimes rupture externally if not opened early or aspirated, and often attain great size before this relief is afforded. Abscesses should not be interfered with, unless from their position they are disturbing vital functions or because of their size and deformity. Of course, if infected, better evacuate.

Shaffer says an abscess should not occur under proper treatment, and if found, should tend to disappear if proper protection and support is provided. (Cases cited). Unless they can be radically dealt with, the source of pus reached and closing up expected, unless urgency demands they had better be left alone. Aspiration and injection of anti-tubercular solutions can be carried out under strict aseptic precautions without harm or danger. Iodoform glycerin, 10 per cent., sterilised, has given the best of any results. Camphor naphthalin has also been used by Menard. Precautions are necessary for this method of treatment. Use a large trocar to evacuate, as clots and masses remain behind with a small canula, then wash out if one fancies to do so with some other antiseptic solution, 1 to 10,000 sublimate is useful, rather unnecessary though; after which inject the cavity full of your iodoform glycerin solution, but do not force it in or use any undue pressure as the fluid may be driven into the surrounding tissues; leave for a time and then withdraw the excess. The point is to thoroughly bring the walls into contact with your solution. Several aspirations and injections may be required and the contents and walls of abscesses have been found to entirely disappear under this method of treatment, but it is not always satisfactory. Tubby, (Guy's Hospital Reports) is not favourable to iodoform oil injections. If they can be completely eradicated at one sitting and do not require drainage, Baker and Treves think it is justifiable to operate, but it is often impossible to remove the carious bone and so stop liquefaction and suppuration, so extensive may the disease be, without completely destroying the continuity of the spine. Receding abscesses which are quiescent had better be left alone. Openings in the inguinal region and discharging sinuses are certainly to be condemned. Cervical abscesses should always be opened through the posterior triangles, if possible, and not the pharynx.

Abscesses, as a cause of compression paraplegia, must be considered. They are very often the cause of this condition and sometimes they find their way out, but at other times it is warrantable to operate, to do a laminectomy and relieve the pressure from in front of the cord. They can be aspirated even in this situation. The treatment of paralysis in Potts' disease demands attention. Muirhead Little says paralysis occurs in from 8 to 30 per cent. of cases. In 75 per cent. of these cases recovery was brought about by rest and extension only.

Bradford places the percentage higher and says that 83 per cent. recovered by conservative treatment. Taylor says 100 per cent. when paralysis comes on during the treatment. Parkin, of Hull, says there are very few cases of spastic paraplegia, most are without rigidity and have complete loss of the knee jerk—ankle clonus and knee jerk is marked in some, (cases here quoted). Recumbency and fixation will usually cure. Gibney speaks highly of Potass. Iod. in large doses, gr. 70, three times a day, in addition to recumbency. I have certainly observed some striking results during its use, both in the Hospital for Ruptured and Crippled, New York, and here, as in the following case: a girl 8 years of age, with complete paraplegia and involvment of both rectum and bladder who gave no sign of improvement until the iodide was administered and pushed. This was made a test case on account of lack of faith in the beneficial influence of the drug. She took 35 grains, three times a day, in rising doses, and completely recovered in a comparatively short time. Bradford, of Boston, says Potassium iodide is of no avail. If it is the interior of the body of the vertebra that is carious and pressure is made against the cord posteriorly, extension is of no avail.

Extension can be carried out by a pelvic band and webbing straps to a cross bar below the feet attached to a rope and pulley and gravity or rope and weight counter-extension.

Macewen's series of laminectomy cases seemed to show as a usual cause of the paraplegia the presence of a connective tissue tumour, hypertrophic pachymengitis pressing on the cord. (British Medical Journal, II., 1888).

Arbuthnot Lane disputes this and says that it is usually due to direct pressure by an abscess on the cord or by a narrowing of the canal by deposit of bone. Neve deprecates early operation and says the scope for laminectomy in Potts' disease is small.

Noble Smith says laminectomy does not interfere with the stability of the spine.

Operative treatment in Potts' disease is limited in its application. If the tuberculous focus can be eradicated entirely there is hope of a good result—if not, distant parts may be infected by disturbing the original lesion as well as continuing the local trouble.

Wiring of the spinous processes has been suggested and carried out, to support the spine and relieve pressure upon diseased portions, I can get no report of results.

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ON RETROPERITONEAL AND PERIRENAL LIPOMATA.

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(*Continued.*)

Enormous retroperitoneal lipomata of this nature, while not unrecorded in literature would not seem to be very frequent. As will be seen from the accompanying chart, I have been able to meet with altogether forty-two recorded cases excluding one or two mere statements of observed retroperitoneal lipomata. The description of these is often imperfect in one or more important particulars, nevertheless taken all-in-all, there is a remarkable similarity in the histories given,

The greatest number have been recorded in France (9); England Germany and Scandinavia have each supplied half a dozen; America five; Switzerland, four; Austria three; Belgium two. The fullest studies made so far have been by Terrillon in France who collected fifteen cases, and by Josephson and Vestberg in Sweden, who in a very full paper have analysed thirty cases (including Terrillon's fifteen. Salzer of Vienna has contributed a thoughtful article on the subject and is the only one, I believe, who has drawn especial attention to the perirenal development of many of these growths.

For the benefit of future workers upon this subject I have tabulated all the cases of retroperitoneal lipoma that I have been able to find recorded, dividing them into those which appear to me to have been definitely of perirenal origin, those in which the origin is doubtful, those which appear to have developed either in the mesentery or the radix mesenterii, and those which judging from the descriptions given seem to have developed in the lower half of the abdomen.

The classification is not wholly satisfactory, for in too many instances only the vaguest idea seems to have ruled as to the primary seat of origin. Nevertheless the attempt to make such a classification may draw the attention of future observers to the need for more exact description of the position of the tumours when first recognised, and the relationship of parts found at the operation or autopsy. It is clear that all these huge lipomata do not have a like origin; a large number undoubtedly originate in the neighbourhood of one or other kidney, others undoubtedly originate lower down; but it is not a little curious that where observers have recorded more than one case, those cases are with rare exceptions all of the same category. Salzer's three cases and my two are all perirenal. Péan's are all mesenteric; Homans does not venture to ascribe a starting point for his cases but they present parallel features. This may, of course, be but a coincidence. If it be not, then probably all are recording like conditions with different preconceived notions.

Nor again can I feel satisfied that every important fact in connection with each case is contained in these tables. I have recorded all those which are commonest in connection with this form of growth, together with important points of departure from the usual history, and again the results of operative interference. Most of the cases, I am glad to note, I have found on the shelves of our medical library at McGill; for the more out-of-the-way articles in French and Swedish[1] literature I have had recourse to the College of Surgeons' Library in London and the Surgeon General's Library at Washington. I would especially acknowledge my indebtedness to this last great library. In the bibliography I note those cases not consulted at first hand.

It will be seen that about one third of the cases may reasonably be described as having a perirenal origin and that very possibly some of those classed as doubtful belong to the same category. The largest collection of retroperitoneal fat occurs physiologically around the kidney and here, consequently, is a most likely place for retroperitoneal lipomata to originate. On the other hand it must be called to mind that fatty tumours do not always originate in those sites where fat is normally present in large quantities: for example they are common over the shoulders and rare in the panniculus, and I have come across no example of abdominal lipomata developing in the essentially fatty appendices epiploicæ. I may add that I have not in my tables included cases of lipomata of the omentum (Meredith[2] and Roberts[3]) or of the gastro-hepatic omentum or ligament, (Peyrot[4]) for these cannot be considered retroperitoneal and are distinguished from the main mass of retroperitoneal tumours by not being crossed anteriorily by any portion of the intestine.

Analyzing the cases here collected, it will be seen that the condition is more frequent in the female than in the male, in the proportion of 25 to 16. Where the relationship to the kidney is given, the growth is found about as frequently arising from the left side as from the right. (Right 13, left 11.) The neoplasm is almost essentially a development of middle and later life, the statistics being as follows :

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[1] With regard to the Swedish cases let me say that I would ask future writers on this subject conversant with the language to verify my epitomes. Where I have epitomised Swedish references to French and other cases and have later abstracted the original articles I have been surprised at the correctness of my epitomes; for my translations have been conducted minus a dictionary, by the light of elementary comparative philology and vague memories of consultations of my Baedeker during a few weeks spent many years ago in Scandinavia,—mainly in Norway and Denmark.

[2] Meredith, *Lancet*.

[3] Roberts, *Medical News*.

[4] Peyrot, *Bulletins et Memoires de la Soc. de Chirug. de Paris*.

Below 30 years	2 cases.
Above 30 but below 40	8 "
" 40 " 50	9 "
" 50 " 60	4 "
" 60 " 70	7 "
" 70	1 "
Not stated	11 "

A very exceptional case is that of Lauwers, in which the tumour was recognized 14 days after birth, and, growing steadily, attained such a size and led to so much emaciation, that when removed at the age of seven, it weighed 6 lbs., or almost a third of the total weight of the child after its removal (20 lbs).

The rate of growth is very slow. Upon an average between two and three years elapsed between the first recognition of the tumour and removal, or death of the patient. Three cases were observed for 4 years ; Bruntzel's case for 5 or 8 ; Lauwers and Lundin and Hedbom's for 7 ; Terrier and Guillemain's for 7 if not 12 years. In other words, the growth for long causes so little general disturbance that the patient does not readily submit to operation until the tumour has assumed enormous proportions. The size attained by the growth is shown by the fact that the majority are recorded as being more than 20 lbs. (English) in weight ; one (Waldeyer) was 63 lbs. ; five above 50 lbs ; four above 40 lbs. ; six between 30 and 40 lbs.

How little general disturbance is caused will be seen by following the epitome given of the general symptoms. In case after case there is the record of absence of pain and absence of any marked disturbance of the intestinal and urinary functions. Only towards the end may there be pain passing down one or both extremities with œdema of the legs. The common history of all the cases is the extreme emaciation that may develop, coupled with dyspnœa.

But in about fifteen per cent. of the cases there is some history of more extensive disturbance. In Madelung's there was a tendency to vomit, in Péan's third case " functional troubles" of the abdominal and thoracic viscera, in one of Roux's, periodic crises of intestinal obstruction, in Josephson and Vestberg's slight digestive disturbances, in Belkowsky's dysuria, in Cooper Foster's frequent micturition, and in Lundin and Hedbom's irritability with flatulence and colic. In only one (Pickering Pick,) is there the history of general pain and severe abdominal disturbance.

It is interesting to note how frequently the definite presence of fluctuation has led to erroneous diagnosis. Even when the tumour has been exposed, as in Bruntzel's case, trocars have been inserted in the expectation that fluid could be drawn off. Nothing could better emphasise the fluid nature of fat in the living body than the frequent history of false diagnosis of ascites, multilocular ovarian cyst, or, as in two cases, of echinococcus cysts. Where there is a fluctuating tumour of the abdomen from which, upon repeated puncture, no fluid is obtainable, it is clear that the existence of a lipoma (or a myxoma) must be seriously considered. One such case occurred recently in Dr. Stewart's wards at the Royal Victoria Hospital. There had been slow progressive, painless and somewhat unilateral development of the abdominal tumour, with accompanying progressive emaciation and dyspnœa. A length of the intestine could be felt passing across the tumour. Unfortunately the patient, a young Jewess, would not be operated upon and her friends removed her to die at home. The only slight contra-indication in this case was the age ; if I remember aright, she was scarcely twenty years old. The apparent development of secondary growths elsewhere was not against the diagnosis, although it was against operation, for we possess other instances of these large lipomata progressing to a sarcomatous termination, (*e.g.* Waldeyer's and my first case).

That a length of the intestine should pass in front of the growth is readily explained. When the growth develops in the mesentery or behind the colon, it must be covered in front by the intestine with, on either side of it, the separated laminæ of the mesenteric peritoneum. That in a very large number of cases the portion of intestine crossing in front is recognized as being portion of either the ascending or descending colon, supports the view that the lipoma in these cases has developed in the neighbourhood of the kidney. In Waldeyer's case the transverse colon passed across the tumour, and this fact led to the opinion that the growth originated in the radix mesenterii, but at the same time the right kidney was involved in the mass, hence this might be included among the perirenal cases. For while a growth developing evenly around the kidney must inevitably push forward the colon (ascending or descending), these growths are not necessarily regular, and we have examples (Spencer Wells and Bruntzel) in which the colon has been pushed to one side. It is thus possible that an irregular growth originating around the kidney should be crossed by portions of transverse rather than by the other portions of the colon. But I would not appear to urge too strongly this contention that, whenever the kidney is involved, there the growth has originated in its neighbourhood. My own case shows very clearly that these large tumours are composed of numerous distinct lobes, some of which upon the surface may be separate and freely movable over the main mass. These, it is true, were in my case small and from the absence of any degenerative changes would appear to have been more recent than the other portions of the growth. Still their existence indicates that there may be a development of multiple retroperitoneal lipomata which eventually fuse, and Dreschfeld's case is strongly in support of this view, as are also those of Balkowsky, Schiller and Spencer Wells.

One symptom mentioned in a large number of the reports needs but to be referred to in passing, namely, the eventual œdema of the lower extremities, due to the venous obstruction in the abdomen. It is noted more than once that this did not show itself coincidently in both legs, but appeared first in the side upon which the tumour originated.

Passing now to the histology of the tumours, the divergent descriptions are easily reconciled when we remember that every member of the group of connective tissue tumours may pass into or show areas of conversion into other members of the group. There are instances of enormous perirenal fibromata (Lathuraz,[1] D'Antona,[2] Bauby and Daunic[3]), and myxomata (Elben,[4] Gould,[5] Witzel,[6] and (?) Guyot[7]) while tumours mainly fatty may show more or less extensive conversion into fibroid, cartilaginous, osteoid, mucoid or embryonic (sarcomatous) tissue. We have thus cases of pure lipoma, fibro-lipoma, fibro-chondro-osteo-lipomata, lipoma myxomatodes, and lipo-sarcomata. On the whole when we are dealing with such large slow-growing tissues one must hold the view that originally they were overgrowths of highly developed tissue, and that where upon extirpation more embryonic tissue is found this is of relatively recent appearance. Thus I cannot agree with Wigglesworth who regarded his case as one of primary myxoma which had undergone later fatty change.

Not only may there be deposits of calcareous salts and *osteoid* appearances in older and degenerated portions of the growth (Péan, Alsberg,) but as Dreschfeld first pointed out there may be true *osseous* development. In Josephson and Vestberg's first case similar true osteomatous areas were recognized. In this same case, as in Waldeyer's and Dr. Hanna's cases, were also evidences of sarcomatous development, but in one of these only (Waldeyer's) were secondary growths found elsewhere. How benign are these growths is further shown by the fact that in only one instance (Tillmann) was there recurrence (? sarcomatous) after removal, and that in another (Roux) the woman gave birth to a healthy child 6 months after its removal.

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[1] Lathuraz. Lyon Méd., 1895. p. 329 (fibroma 40 lbs. ? mesenteric).

[2] D'Antona, Atti. della R. Accad. Med. Chir. di Napoli, 1895, p. 142 (perirenal fibrosarcoma).

[3] Bauby & Daunic, *Le Midi. Méd.*, II., 1893, p. 532, (' pararenal' fibro-myoma).

[4] Elben, Wurttemb. Med. Corresp. bl., 1880, No. 14 (hæmorrhagic perirenal myxoma).

[5] Gould, *Lancet*, 1888, II., p. 518 (hæmorrhagic " perirenal myxoma").

[6] Witzel, *D. Zeitschr. f. Chirurg.*, XXIV., 1886, p. 326.

[7] Guyot, *Gaz. de Hôpt.*, 1870, p. 369 (myxo-chondro-fibroma).

On the whole the tendency is for these massive tumours to be of the nature of myxolipoma, or as some term it, of lipoma myxomatodes. One of the fullest descriptions of such a growth is by Bruntzel, under the misleading title of fibroma of the capsule of the kidney. There can be no doubt, however, in reading Dr. Bruntzel's very clear description of his case and the naked-eye appearance of the tumour that he was really dealing with a growth of this nature : there was the same gradual though very slow enlargement of the abdomen and progressive emaciation, unaccompanied for years by any disturbance of the general health, the same perfect fluctuation leading to numerous fruitless attempts to tap the enlargement. Even when the tumour was exposed upon the operating table, the surgeon was so deceived by its appearance and fluctuation that he employed a trocar in the hope of lessening its bulk prior to removal, a feature that speaks powerfully against its having been mainly fibromatous. And indeed the description given in the article is that the tumour was composed of a number of masses from the size of a child's head to that of a man's head, in the fibrous tissue of which lay large quantities of loose fatty tissue ; at the back, in a kind of hilum, lay partially imbedded the left kidney. Clearly from this description the growth was a lipoma myxomatodes identical with my own case.

Passing now to the results of operative interference the results obtained were perhaps only what might be expected to follow the removal of enormous masses filling the greater portion of the abdomen and composed of a tissue which, contrary to what is frequently taught, has a peculiarly rich vascular supply. Of the 42 cases, in 26 the tumour was removed, wholly or almost wholly. In twelve cases the operation was successful, or 46.1 per cent. (Alsberg, Buckner, Bruntzel, Belkowsky, Lundin and Hedbom, Lauwers, Madelung, Monod, Péan, Pernice, Roux and Tillman) though as above stated in Tillman's there was recurrence. In general there is little sign of surrounding inflammatory disturbance and the layer of peritoneum covering the growth is described as being smooth and glistening. In general also the huge mass peels out with fair ease from its surroundings, though there are often accessory fatty lobules that have to be removed after the evisceration of the main mass.

The greatest danger lies in the fact that in its growth forward the tumour carries before it the portion of the intestine and of necessity the mesenteric vessels supplying this. As a consequence, unless great care be taken in the removal, the blood supply of this portion of the intestine is cut off, and gangrene or necrotic inflammation ensues. This seems to have been the history in most of the fatal cases and in some of those which were successful (Madelung, Alsberg, Bruntzel, Lundin and Hedbom).

There are thus it would seem two courses to be recommended to the surgeon operating in such cases. Whenever possible the tumour should be approached by a lateral or lumbar and not by any anterior incision, for by this means it may be removed without excessive injury to the covering peritoneum and the vascular supply of the gut which crosses it. Failing the adoption of this course there must be free resection of this portion of intestine. Alsberg removed seven inches of the transverse colon, Madelung, eight inches of the small intestine which had been injured, Lundin eight inches of the transverse colon with repeated subsequent enterotomies, while Roux removed four feet of the small intestine.

Exploratory incision without removal seems in one case (Terrier and Guillemain) to have led to arrest of growth and recovery of health during the next three years.

To recapitulate—a retroperitoneal lipoma may be suspected where there is a very slowly growing tumour situated most often more to one side than the other, accompanied by little disturbance of general health save progressive emaciation and eventual dyspnœa; which is crossed by a length of intestine, and gives a sense of fluctuation; from which, further, repeated puncture fails to draw any fluid. The sense of fluctuation distinguishes this from a fibroma, the rate of growth from a sarcoma and to some extent from a myxoma. The diagnosis from this latter, rarer condition is difficult. The results of puncture exclude ovarian or other cystic formations and ascites.

Removal is possible even when such a tumour has attained enormous dimensions. For the operation to be successful the main precaution to take is to see that the gut crossing the tumour is not deprived of its blood supply or if so deprived is freely removed, with resection.

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TABLE I. RETROPERITONEAL LIPOMATA. CAS

Authority	Age and Sex.	Duration of Growth.	General Symptoms.	Fluctuation.	Relationsh of Colon.
1. Morgagni . . . 1760.	F. 60	Several months.	Not given.	Not stated.	Not stated.
2. Moynier . . . 1850.	F. 47	Not known.	Suffered from cancer of uterus ending in peritonitis.	Not stated.	Descend'g col in front.
3. Spencer Wells.. 1868.	F. 43	Several years.	Confined to room for last year.	Not stated.	Ascend'g col passed to lef
4. Bruntzel. .... 1882.	F. 33	5 or 8 years.	Good health for several years; progressive emaciation; latterly pains down left lower limb.	Yes.	Descend'g col adherent left side growth a teriorly.
5. Wigglesworth... 1883.	F. 43	2 years.	Emaciation; dyspnœa.	Yes.	Not stated.
6. Kümmell .... 1886.	M. 38	3 years.	Rapid growth during last few months; no symptoms mentioned.	Yes.	Colon cross front of t mour.
7. Salzer (1)........ 1888. Kundrat's case.	M. Mid. Age.	Very slowly growing.	Not given.	Yes.	Descend'g col in front-
8. Salzer (2)........ Kolisko's case.	F. 53	Not stated.	Not given.	No.	Not stated.
9. Salzer (3)...... . Billroth's case.	M. 40	2 years.	Growth progressive, painless; good appetite; regular motions; no vomiting or icterus; great emaciation; œdema of lower limbs for last year.	Yes.	Descend'g col in front.
10. Thiriar .... 1889.	F. 63	——	——	——	——
11. Tillman .... 1891.	F. 28	1 year.	Growth more rapid during later months, with dysuria.	Yes.	Descend'g col and sigmo in front.
12. Monod .... 1892.	M. —	Not stated.	Not stated.	Not stated.	Not stated.
13. Author .... Dr. Hanna's case.	M. 45	13 months.	Growth progressive and painless; appetite good; no digestive troubles; suppuration of part of growth; towards end slight œdema of legs.	Yes.	Descend'g col in groo pass'g acro front.
14. Author.......... Army Museum case.	M. 60	2 years.	Steady painless growth; no disturbance of general functions.	Not stated.	Not state clearly.

HICH APPEAR TO HAVE BEEN PERIRENAL IN ORIGIN.

ERMINATION.	RELATIONSHIP TO KIDNEY.	NATURE OF TUMOUR.	WEIGHT.	REMARKS.
operation.	In connection with capsule of right kidney.	Some parts firmer than others; appeared like fat.	———	"Ut steatomatis refferret materiam."
———	Left kidney behind and to inner side of tumour.	Pure Lipoma; very vascular.	315 grms.	Tumour only found at autopsy, 2 to 3 times size of kidney; soft and fluctuating; capsule of kidney continued on to tumour
arotomy ; eritonitis ; d. 48 hours.	Right kidney involved in mass.	Lipoma.	———	Even after removal of main mass 12 to 20 lbs. of the growth were removed at autopsy.
arotomy ; fis- ula from de- ending colon ; ecovery.	Left kidney adherent to border of tumour in a kind of hilum.	Fibro-lipoma œdematosum.	37½ lbs, (German)	Puncture attempted several times; states origin of growth from capsule: gives good diagram, but calls growth a "fibroma."
th from res- iratory trou- les.	R. kidney buried 1½ inches in growth.	Myxo-lipoma.	41¼ lbs,	Describes case as a myxoma which had undergone fatty degeneration.
arotomy ; d. days later.	"Started from left kidney."	Lipoma, not fully described.	Enormous.	Puncture negative; diagnosis echinococcus cysts; spleen also adherent.
arotomy : d. ortly after.	Left kidney completely imbedded in upper part of tumour.	Myxo-lipoma.	Size of man's head.	Echinococcus diagnosed.
arotomy ; col- pse.	Right kidney carried four fingers breadth forward by growth.	Fibro-lipoma myxomatodes.	Size of man's head.	Solid ovarian tumour diagnosed.
arotomy ; col- pse.	Left kidney imbedded in the growth.	Myxo-lipoma.	27,400 grms.	Puncture negative; gives good diagram; points out perirenal origin.
———	Assoc'ted with capsule of left kidney.	Fibro-lipoma.	11 kilos.	Diagnosed as multilocular cyst of ovary.
arotomy ; re- very : recur- nce.	Left kidney removed with tumour.	In part lipoma, in part myxoma fibromatosum.	10 kilo (with kidney).	Diagnosed ovarian cyst; recurrence after 1 year; inoperable.
arotomy ; re- very.	Degenerated kidney, side not stated, thought to be within tumour.	Lipoma.	6,600 grms,	No signs of kidney, its vessels, or ureter seen during the operation; in middle of tumour a mass of fatty degenerated tissue shape of kidney (?)
ticæmia and yspnœa ; eath.	Left kidney imbedded in hinder surface and in part atrophied.	Myxo-lipoma becoming sarcomatous in one area.	14 lbs.	Puncture negative; diagnosis retroperitoneal tumour confirmed by exploratory laparotomy.
ght cold ; d. om exhaus- ion.	Left kidney imbedded in hinder surface and atrophied.	Myxo-lipoma.	41½ lbs.	———

TABLE II.—CASES O

Authority.	Sex and Age.	Duration of Growth.	General Symptoms.	Fluctuation.	Relationshi of Colon.
15. Waldeyer and Freund. 1865.	F. 30	Not stated	Not given.	Not stated.	Transv. colo passed acro
16. Pickering Pick. 1869.	M. 36	11 months	Rapid growth; great emaciation; malignant cachexia; vomiting and great pain.	Not stated	Asc'g colon front.
17. Cauvy. 1874.	M. 54	4 years	No pain; great emaciation; dyspnœa; œdema of legs, specially right.	Yes.	Not stated.
18. Dreschfeld. 1880.	F. 49	3 years	Good health; gradual painless growth; emaciation; anorexia during last year.	No.	Main mass back of abdmen.
19. Madelung. 1881.	F. 32	2 years (?)	Abdominal disturbance for 2 yrs.; tumour noticed for 6 mos. before operation; no pain; tendency to vomit.	Yes.	Jejunum in itimate co nection.
20. Homans. 1883. 1st case.	M. 39	4 years	Good health; progressive growth, with emaciation.	Yes.	Asc. colon a herent cross transversel
21. Homans. 2nd case.	F. 60	1 year +	Emaciation and dyspnœa.	Yes.	Asc. colo cros'd in fro
22. Terrillon. 1886.	M. 35	3 years +	Abdominal pain; no urinary and little intestinal disturbance; progressive emaciation.	Yes.	Cæcum and as colon in fro
23. Lauwers. 1891.	Boy 7	7 years	Noticed when 14 days old; slow growth right sided; often punctured without result; great emaciation.	——	Asc. colon alo left edge.
24. Terrier and Guellemain. 1892. Case 2.	F. 55	2 years	Gradual growth in rt.; hypochondrium.	Yes.	——
25. Schiller. 1894.	M. 40	1 year +	Gradual growth; little disturbance; constipation(?)	Not stated.	Desc. colo push'd towa mid-line.
26. Josephson and Vestberg. 1895. Case 2,	M. 70	15 months	Gradual growth; slight digestive disturbances; great emaciation, etc.; œdema of legs and scrotum.	——	Colon and sm intestines a herent growth.
27. Lundin and Hedbom. 1895.	M. 52	7 years	Painless; diminished appetite; irritability; flatulence, colic and dyspnœa; decrease in urine.	——	Asc. colon patic flex. a transv. col adherent.

OUBTFUL ORIGIN.

ERMINATION.	RELATIONSHIP TO KIDNEY.	NATURE OF TUMOUR.	WEIGHT.	REMARKS.
——	R. kidney imbedd'd in mass.	Myxo-lipoma, with sarcoma in parts.	63 lbs. (German)	Secondary growths in liver (sarcomatous); supposed to have developed in radix mesenterii, but right kidney involved.
ank marasmus. (?)	Not stated.	Pure lipoma.	29¾ lbs.	Said to have been situated more to the right than left.
epticæmia.	Not known.	Lipoma.	——	Autopsy not obtainable; tumour of great size exposed and found retroperitoneal intra vitam.
aporotomy; death 5 days later.	L. kidney pushed to right border of tumour.	Lobulated fibrolipomata, with osseous nodules	Not ascertained.	Lobules on both sides of independent origin; part removed at p.m. weighed 12 lbs. and extended down pelvis on left side.
aparotomy; resection of 8 cm. of gut; recov'ry.	——	Lipoma, œdematosum myxomatodes.	——	Puncture without result; diagnosis ovarian cyst; extended on both sides; intestines behind; probably from mesentery of small intestines.
aparotomy; death.	Not stated.	Myxo-lipoma.	57 lbs.	Puncture ineffectual; kidneys stated to have been unaffected; growth on right side mainly.
aparotomy; death.	Not stated.	Pure lipoma.	35 lbs.	
aparotomy; D. 32nd day; diarrhœa.	Not stated.	Myxo-lipoma.	57 lbs. (French)	Both kidneys said to have been healthy: growth mainly on right side.
aparotomy; recovery.	——	Lobulated lipoma with fibrous bands.	6 kilo.	Tumour nearly one-third weight of child.
Exploratory incision; arrest of growth.	Not known.	Enormous lobulated lipoma.	——	For three years after exploratory laparotomy patient's condition improved; arrest of growth; hold it to have developed in mesentery.
Laparotomy; D. 14th day; heart paralysis.	Not stated.	Lipomata.	11·3 kilo.	Multiple nodules, mainly retroperitoneal; some pedunculated; main mass to left.
Marasmus; death	Kidneys small; Lt. connected with tumour.	Myxo-lipoma, with sarcomatous and fibromatous areas.	10·3 kilo.	If I read the Swedish aright, the cæcum was over the front of the tumour, but the growth was median.
Laparotomy; recovery.	Not stated.	Lipoma.	37½ lbs. (Swedish)	Resected 20 cm. of transv. colon; gangrene supervened, successive enterotomies and recovery.

TABLE III. CASES NOT OF PERIRENAL ORIGIN AND APPAR

Authority.	Sex and Age.	Duration of Growth.	General Symptoms.	Fluctuation.	Relationship of Colon.
28. Buckner . 1852.	F. 8-para.	3 years.—	Caused no marked trouble, gave birth to healthy child six months before operation.	Elastic.	——
29. Pean ... 1881. Case 1.	F. 60.	2 years.	Good health, progressive growth.	Semi-fluctuant.	——
30. Péan ... . 1881. Case 2.	F. 62.	Not stated.	Great emaciation, no ascites.	Yes, in parts hard.	——
31. Pean .... 1885. Case 3.	F. 30.	1 year.	Bad health; functional troubles of principal viscera of abdomen and thorax.	Yes.	——
32. Alsberg.......... 1887.	F. 46.	3 years.	Painless; had grown rapidly of late, emaciation, weakness, dyspnœa, enlarged veins over abdomen.	Yes.	Covered in front by expanded upper lamina of Tr. meso-colon.
33. Roux............ 1893. Case 2.	?	Not stated.	——	Not stated.	Not stated.
34. Roux ... . Case 3.	M. 41.	Not stated.	Periodic crises of intestinal occlusion.	——	——
35. Josephson and Vestberg. 1895. Case 1.	F. 61.	3½ years.	No symptoms save great emaciation and increase of abdomen.	Yes.	Covered by rectum, sigmoid and descending colon.

TABLE IV,—CASES REGARDED AS GROWING FROM

36. Broca... .... 1850.	M. aged	Not stated.	Not stated.	Semi-fluctuant.	Sigmoid flexure lay over front.
37. Pollock .... 1852.	F.	Not known.	Not stated.	——	——
38. Cooper Foster.. 1868.	F. 63.	4 years.	General health unimpaired frequent desire to micturate and pass fæces, during last few months œdema of legs.	Yes.	Asc. colon in front.
39. Pernice.......... 1884.	F. 64.	6 years.	Steady growth, great emaciation, œdema.	Yes.	Adherent to appendix and cæcum.
40. Terrier and Guillemain 1892. Case 1.	F. 40.	7 or (?) 12 years.	Slow growth with emaciation, loss of strength.	Soft and yielding.	Cæcum and asc. colon over tumour.
41. Roux......... ... 1893. Case 1.	F.	——	——	——	——
42. Belkowsky...... 1893.	F. 46.	2½ years.	Right-sided growth, dysuria. No other symptom.	——	Mass in meso-colon of sigmoid.

TLY DEVELOPING IN THE MESENTERY OR RADIX MESENTERII.

ERMINATION.	RELATIONSHIP TO KIDNEY.	NATURE OF TUMOUR.	WEIGHT.	REMARKS.
parotomy; re- overy.	—	Apparently a fibro-lipoma.	Not given	Stated to be in mesentery between laminæ of peritoneum.
parotomy; lied 10th day, liarrhœa.	—	Lipoma.	12 kilo.	Stated to be behind mesentery.
parotomy; lied 4th day, xhaustion.	—	Fibro-lipoma with osteoid and calcareous areas.	20 kilo.	Stated to be behind mesentery,
parotomy; re- overy.	—	Lipoma.	25 kilo.	Diagnosed solid mesenteric tumour; fibrous pedicle to prevertebral periosteum; enceinte 3 months at operation, child born at term.
paratomy; re- overy.	Portion of tumour in neighbourhood of the kidney left behind.	Lipoma, in parts myxo-lipoma, in parts calcified.	34 lbs. (German)	Tumour grew between the two kidneys, pushing transv. colon down. Resected 18 ctm. of tr. colon.
parotomy; re- overy.	—	Lipoma.	Not given	Situated in region of sigmoid; lipoma of meso-colon.
parotomy; re- overy.	—	Lipoma.	—	Resected four feet of small intestine; stated to be mesenteric.
parotomy; par- lysis of bowel, ollapse 3rd day	—	Fibro-myxo-osteo-lipoma.	9 kilo.	Stated to have grown in mesentery of sigmoid flexure.

IAC FOSSÆ OR FROM BROAD LIGAMENT.

—	—	Lipoma with former fibro-lipomatous nodule.	About 15 kilo.	Died soon after admission to hospital before particulars could be obtained.
—	—	Simple fatty tumour.	—	Evidently small, found at autopsy in tissues of b'd ligament.
nœa.	—	Pure lipoma.	55 lbs.	Stated to have originated in right iliac region.
parotomy; re- overy.	—	Pure lipoma.	15 kilo.	Diagnosis; ovarian cyst (?) from broad ligament; 6 intra-ligamentous cysts were removed at same time.
parotomy; lied 8th day, ntestinal occlu- ion.	—	Pure lipoma.	7.850 kilo.	Tapped without result; diagnosis, retroperitoneal lipoma, adherent at side to fossa iliaca; right ovary also adherent; tumour occupied ¾ abdomen.
—	—	Lipoma.	—	Stated to be growing in right iliac fossa, in association with a fibroma.
parotomy; re- overy.	—	Lipomata with fibromata.	—	One growth in right iliac fossa (fibromatous); another in mesocolon of sigmoid flexure and extending up along left ureter (lipomatous).

FRACTURE OF THE SCAPULA BY MUSCULAR ACTION ALONE.

BY

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Fracture of the body of the scapula by muscular action is an accident of such rare occurrence that in the majority of text-books it is entirely ignored, some even saying that this accident is always the result of severe direct violence; others say it is almost always so caused, while still others, as Holmes, say that "it (the scapula), *is thought* to have been fractured in a few instances by muscular action alone." T. Pickering Pick, however, in his "Fractures and Dislocations," mentions in a foot-note that "one instance of fracture of the body of the bone by muscular action is quoted in the *Journal de Chirurgie* of May, 1845, but makes no further reference to it. The following report of an undoubted case of this fracture may therefore be of interest:

H. K., aged about 45 years, tall, spare but muscular, was injured on November 21st, 1893, as follows: He was driving a heavily laden team down a somewhat steep incline and walking beside the load, when part of the harness broke, and, to prevent the waggon running upon the horses, he caught hold of one wheel by the spokes with both hands. The impetus, however, was too great, and he was gradually forced over and down upon one knee. As his knee touched the ground, he felt something give way in his left shoulder and lost his hold. On rising to his feet he found the arm powerless and very painful, the pain being referred to the shoulder joint, which he thought to be dislocated.

On examination, there were found to be no visible signs of any bruise or injury, and he absolutely denied having received any blow from the waggon or anything else or having touched the ground with anything but his knee. The left shoulder presented no deformity, but was held somewhat lower than the right, the arm hanging straight down, limp and powerless, by the side. There was no swelling anywhere, as he was seen within a few minutes of the occurrence of the accident. On manipulation of the scapula, it was found that the entire inferior angle was torn away and separated from the rest of the bone by half or three-quarters of an inch. The line of fracture seemed to begin at about the notch where the oblique line begins on the axillary border of the bone and to run across to the vertebral border almost parallel with the spine, the piece thus separated comprising considerably more bone than is covered by the attachments of the teres major and serratus magnus muscles. The fragment was freely movable, but it was only when the arm was pressed to the side, with the elbow held up and slightly to the rear, that it could be pushed up into its place and crepitus produced. The arm was put up in this position in a sling, with a rib roller enclosing the upper arm and binding it to the chest. A pad over the scapula seemed necessary to prevent the fractured edge of the fragment from tipping backwards and was therefore applied. Firm union was secured in seven weeks, leaving, however, a very marked ridge of callus over the seat of fracture. Motion was perfect, and the arm regained all its former usefulness. In this case, which was undoubtedly caused by muscular action alone, as shown by the absence of all bruises or abrasions and by the evidence of himself and others that he had received no blow or fall whatever, the powerful combined action of the muscles attached to the inferior angle of the bone evidently caused the fracture. And the scapula at this point is so covered with and imbedded in muscular tissue that, although the fragments were widely separated, there was yet no deformity visible to the eye alone, and, had there existed any other injury to the shoulder, the absence of crepitus and the reference of the pain elsewhere might easily have caused this to pass undiscovered.

Clinical Lecture.

ON A CASE OF CHRONIC LEAD POISONING.

DELIVERED AT THE ROYAL VICTORIA HOSPITAL, JAN'Y 27TH, 1897.

BY

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Gastric Crises---Multiple Arthritis---Subjective Disturbance of Sensation---Muscular Atrophy of the Aran-Duchenne Type---Ataxia---Anæmia---Rapid Pulse---Chronic Nephritis (?).

GENTLEMEN,

I desire to direct your attention to a case of lead poisoning presenting certain symptoms of an unusual character. The story of this girl's troubles is a long one. It dates back four and a half years. She is now 27 years of age. Her occupation is that of a silk weaver. She enjoyed good health till September, 1892. At this time she was rather suddenly seized with pain in the region of the stomach, the pain was worse after taking food, and for several days she vomited after every meal. As the latter ceased she complained of pains in the joints of the upper extremities and of numbness in the hands. The middle phalangeal joints were swollen, red and very painful on movement. The wrists, elbows and shoulders, although painful on movement, were not red or swollen. The epigastric pain lasted for about six weeks, and the joint pains were more or less present until March, 1893, a period of six months, the pain being sufficiently severe to prevent her doing any work. She noticed also that there was wasting of the small muscles of the hands.

From March to September, 1893, she was free from pain, but the wasting and consequent weakness of the hands persisted and numbness of the hands was also present. She was, however, able to do house work.

In September, 1894, she had a second attack resembling that ushering in the onset of her troubles a year previously. She was fevered and had pains in the stomach and loins, and vomited after meals. The latter disappeared in the course of a week, but the former persisted. With the cessation of the vomiting, numbness and sharp pains in the upper extremities, felt mainly in the joints particularly in the middle phalangeal joints, came on. The latter were, as during the previous attack, reddened and swollen.

Slight pains in the joints of the lower limbs were also complained of, but not sufficiently severe to prevent her from going about. The hip, knee and joints of the feet were all painful, but not swollen. During the year 1895 patient was able to be about the house, by times a little better and a little worse. In February, 1896, there was another acute attack ushered as before, by a week of vomiting, pain in the region of the stomach and in the lumbar region. There were darting pains in all the joints, worst in the small joints of the hands and feet. The right great toe was the only joint of the lower limbs red and swollen. Numbness in both upper and lower limbs was constantly complained of. Owing to the pain and weakness she was neither able to walk, stand or feed herself. The pain lessened somewhat in August, 1896. She was able with assistance to move about the house, and to feed herself, although with difficulty. In November, 1896, she had a fourth attack of acute epigastric pain and vomiting, followed by return of pain in the joints and loins and numbness in the extremities. The vomiting ceased after three days, and the pains disappeared after nine days. It was at this time that she was admitted into the hospital.

She was never robust, and has often complained of palpitation on exertion. The family history is good.

Present State.—She is pale and poorly nourished. Her weight is 81 pounds. She is despondent.

The gait is ataxic. She is unable to stand alone even with her eyes open. She tends constantly to fall backwards. During a five weeks stay in the hospital, the temperature was found to be slightly increased, averaging about 99° Fahr. The pulse ranged between 80 and 95.

There is marked atrophy of the small muscles of both hands. The interrossei, the lumbricales and those making up the thenar and hypothenar eminences are all wasted to an extreme degree.

The extensors of the wrists are also considerably wasted. The terminal phalanges are flexed, while the proximal ones are extended, giving rise to "claw hands." In consequence, there is great disability; she is unable to feed herself, and has been unable to write for the past nine months. There is great weakness of the extensors of the wrist, but there is no "wrist drop."

The muscles of the feet and legs are wasted and weak. The wasting chiefly involves the muscles on the anterior surface. With assistance she is able to take a few steps, but has a tendency to fall backwards. When lying, the feet and toes are in a state of planter flexion.

The tendon reflexes of the upper extremities appear to be normal. The abdominal and planter reflexes are increased. The knee jerks are present, but not exaggerated. There is no ankle clonus. Co-ordination is good when in the recumbent position. Muscular sense in both upper and lower limbs is normal. There is a good deal of subjective sensory disturbance in the extremities. She constantly complains of darting pains in the joints of the fingers and toes, and of feelings of cold and heat in the hands and feet. Sensibility to touch, pain and temperature is, however, normal. Sight is good. Pupils react readily to light and accommodation. The ocular muscles are normal. Hearing is more acute in the right than in the left ear, a watch being heard 3 times as far away on the right as on the left.

There is no reaction to the induced current in the muscles of the thenar and hypothenar eminences. There is however slight reaction in the interossei and the extensor muscles of the forearms.

Taste is normal to sweet, sour, bitter and salt.

The remaining cranial nerves do not show any disturbance in their function.

Vascular System.—The pulse is rapid, rate 95 ; small, easily compressible, regular in volume and rythm. The vessel wall is normal in the superficial arteries.

The apex beat is in the fifth left interspace, 2¾ inches from mid-sternum. It is normal in force. A slight blowing systolic murmur is heard at the apex. It is not transmitted backwards, but is heard over the pulmonary cartilage. The second sounds at the base are normal. There is no œdema of the face or extremities.

Respiratory System.—The chest is long and flat. The expansion is good and equal, 2½ inches. Respiration is costal. There is no dyspnœa, cough or expectoration. The breath sounds are vesicular, no adventitious sounds being heard.

Digestive System—The tongue is pale, clean, but rather dry. The teeth are bad and here and there covered with sordes. The gums are separated from the teeth and a blue line is seen at their margins, especially marked where sordes are present.

Constipation is usually present.

The liver and spleen are normal.

A blood count shows 1,880,000 red, 10,000 white and 55% of hæmoglobin.

The urine was, during her stay at the hospital, found to contain at every examination, casts, mainly hyaline, though albumen was never present. The sp. gr. was usually low, 1012. It was free from sugar. The urea was .825%.

During her first hospital residence she was treated with iodide of potassium and had three hot-air hip baths.

She could walk much better afterwards, and suffered much less from pains in the loins. She also slept much better. She left the hospital on the 23rd December, 1896, She was re-admitted on the 14th January. While at home she had swelling of feet, legs and eyelids and a few days later there was general œdema, but this all disappeared in the course of about ten days, and at present there is no trace of œdema in any part. The urine is found to contain casts, but it is free from both sugar and albumen.

The very remarkable history, together with the unusual conditions present, at once, you will all readily observe, place the case outside of any of our so-called typical diseases. The history of repeated attacks of acute gastric irritation at long intervals, followed by arthritic attacks, and the onset eventually of marked wasting of certain muscular groups is in substance the chief clinical feature. The fact that the patient has a blue line on the gums, where they join several of the teeth, makes one naturally first think of chronic lead poisoning. This line is, however, not very distinct, and further the changes met with are not those usually characteristic of lead. You all know that the characteristic symptoms in lead poisoning beside the blue line, are intestinal colic and paralysis of the extensors of the wrists and first phalanges, producing wrist drop. In our patient there has been no history of intestinal colic and the extensors of the wrists, although weakened, are not paralyzed ; the weakness is due to wasting and not to paralysis.

We have here the condition, as far as the hands are concerned, of progressive muscular atrophy of the Aran-Duchenne type, a marked example of which we recently had in the clinic. The case, is, however, clearly not one of progressive muscular atrophy, as there has been no progress during a long time. An ordinary progressive muscular atrophy would have ended fatally by this time. It is well known that lead causes an atrophy of the muscles ; usually, however, the atrophy induced by this metal is attended by paralysis. It is rare, indeed, to meet with cases of pure atrophy without paralysis. The disability here is not due to paralysis, but to loss of muscular fibres. It is commonly believed that lead chiefly, if not entirely, brings about paralysis through producing a peripheral neuritis. That is certainly the most plausible explanation of the wrist drop. Lately, however, it is beginning to be recognized that lead is often widespread in its effects on the nervous system. Not counting the not infrequent cerebral symptoms of lead, we also meet with evidence pointing to a direct action on the spinal cord. This case appears to be an example of this. That the atrophic and other symptoms are due to lead is rendered more than probable. First of all, we have the blue line on the gums and secondly she worked for several years at a trade where she was exposed to lead. The physician who treated her during the first attack, diagnosed it as being due to lead. She acknowledges that she was in the habit of keeping the yellow silk-thread in her mouth. This is not a rare mode of infection in women. Undoubtedly a small quantity of lead is sufficient to bring about the symptoms of poisoning in women. They have a special liability to poisoning by lead. This fact was exemplified in one thousand cases of lead poisoning which occurred in Yorkshire from drinking water contaminated by the metal. It was found that the proportion of women to men was as 4 to 1. The wasting of the muscles here is in all probability due to a progressive degeneration of the ganglion cells of the anterior horns, the lead picking out structures which subserve the same functions as the motor nerves. There is wasting of the anterior tibial group of muscles, another very unusual manifestation of lead poisoning, although a common one of arsenic and alcohol.

Another unusual symptom of lead poisoning is ataxia. The ataxia of movement in this case is especially in the trunk muscles and the upper part of the lower limbs. This is probably to be explained by an involvement of the afferent fibres that come from the muscles that course up the postero-internal columns of the cord. The degeneration must be in the cord itself and not in the afferent peripheral fibres, otherwise we would have loss of knee jerks.

Why lead should pick out in the vast majority of cases the nerve endings in the musculo-spiral nerves we know not? Why there should be exceptions to this rule is equally unknown? The exceptions are numerous enough to be of great interest. In addition to those present in this case, others are met; for instance sometimes lead causes paralysis of an ocular muscle, sometimes a laryngeal muscle. There must be some determining factor to bring about such exceptions to a general rule. It is some factor that lessens the resistance to the chemical union betwen the constitutents of the poison and the nerve constitutents.

The case illustrates further manifestations of the effects of lead. There is a distinct history of pain and swelling in various joints. Whether the arthritic attacks were simple or uratic it is difficult to say. There is no evidence of any other gouty symptoms; several of the phalangeal joints are enlarged, but that is as frequently the effect of simple as of uratic arthritis. The relation between gout and lead poisoning is very striking in patients who have a hereditary tendency to the former, especially if they take alcohol in the form of beer. In beer drinkers who suffer from lead poisoning, arthritis and other symptoms of gout are very common. Lead undoubtedly has a marked effect in such in inducing uratosis.

Finally a word about the renal symptoms. The urine is of low specific gravity and since she has been under observation it is constantly found to contain hyaline casts. Albumen, however, has not been present.

Are we to conclude from this, that there are interstitial or parenchymatous changes?

The persistent presence of casts for more than two months in a urine of low specific gravity, together with a general œdema, even if only temporary, is sufficient evidence of some changes. It is a well recognized fact that lead may bring about interstitial and parenchymatous changes in the kidneys, independent of any arterio-sclerotic changes.

In regard to prognosis little need be said. The atrophy in the small muscles of the hands has reached such an extreme degree that no restitution can take place. Whether there is any lead remaining in the system we have as yet been unable to determine. She is at present taking iodide of potassium, and she will be advised to continue the use of this drug for some time to come. Lead like the other heavy metals may remain for many years deposited in the tissues and in every case where symptoms of the poisoning have not disappeared it is advisable to prescribe iodide and to order occasional purgatives to ensure the elimination of any of the metal that may be thrown out into the intestinal canal.

Ephemerides, 1897.

By William Osler, M.D.

XIII. RHEUMATIC NEURITIS ASSOCIATED WITH SUBCUTANEOUS FIBROID NODULES.

I do not remember ever to have met with a case quite similar to the one I here report. The presence of the subcutaneous nodules, so common in rheumatic conditions, warrants, I think, the diagnosis. It is interesting, also, to note the great sensitiveness of the muscles, a striking feature in the neuritis due to alcohol and following typhoid fever.

Mr. W., aged 60, sent by Dr. Lockwood, July 1st, complaining of pains in the arms and legs. Patient is a tall spare man, who has always enjoyed good health, with the exception of dyspepsia, to which he has been subject at intervals for many years. He has taken very good care of himself. He is a moderate drinker. There is neither gout nor rheumatism in his family.

Early in March of this year he began to feel pain in the right leg chiefly about the ankle and instep, as though there was a band about them. It was sharp, but not very acute. He has felt at times a little numbness and tingling, and on several occasions there was a little redness of the skin about the ankle. Very soon the left leg became affected in the same way, and one day there were very sharp stabbing pains down the back of the leg. He describes here, too, the same sensation, as if there was a band about the ankle; he still has it at times. There was neither swelling nor pain in the joints. At this time the trouble was confined altogether to the legs. While the pain did not incapacitate him, it was a source of a good deal of annoyance and distress. About two months ago the arms began to be affected. There were ill-defined pains about the shoulders, without anything to be seen or localized, but with a good deal of tenderness of the forearms, particularly of the muscles, when he laid them on anything. He does not seem to have had any paræsthesiæ. The muscular power of the arms has been perfectly good. The chief distress really has been a soreness on pressure; yesterday there was so much pain in the arms that to get relief he had to sit with them stretched out on pillows. Early in the attack he noticed the presence of certain nodules on the legs and arms, which would appear and disappear. Beneath the skin a few inches from the elbow of right arm, just along the margin of the ulna, there is a subcutaneous fibroid nodule, very superficial and prominent. There have been others in this region which have disappeared. There is no thickening of the ulnar nerve; there are no trophic changes. The muscles themselves are not very sore to the touch, though there is much pain in them when the arm is resting in certain positions. The blood vessels are not specially thickened. There is no soreness along the musculo-spiral nerve, but there is a little tenderness of the brachial cords. On several occasions there has been a little redness. One of these small nodules which was on the edge of the left tibia, has disappeared entirely. There is no atrophy of the muscles in arms or legs. The knee jerks are present, perhaps a little plus. The pupils are of medium size, and react well to light. There are no tophi on the ears.

July 8th. He has not been so well. The soreness in the arms and about the left wrist is very great and there has been subcutaneous redness and swelling. There is now on the extensor surface of the left arm, midway between the elbow and wrist, a raised red area about 3 by 2 inches. The redness looks fading, but this part is distinctly puffy. It was a patch similar to this which appeared on both ankles at an early period of the disease.

The subcutaneous fibroid nodule on the right arm has disappeared. There is one now on the inner surface of the left knee, which feels like a small shotty body beneath the skin. It is a little sensitive. There is another small nodule just on the inner surface of the patella. The left instep is distinctly swollen and red, and it is tender just above the outer malleolus.

Dr. Lockwood informs me that Mr. W. improved through the summer, and gradually got quite well after a course of baths at one of the springs.

XIV. Bright's Disease or Myxœdema.

There are few practitioners who, having once recognised myxœdema, do not recall cases of the disease which they have treated as chronic nephritis. There are instances in which the diagnosis is by no means easy, of which the following is an illustration.

Mrs. L., aged 44, seen February 28th, 1895, with Dr. Norris, complaining of swelling of the legs and face. She was a married woman with ten children, and had always had excellent health. Ever since she has been " grown-up " she has had a tendency to swelling of the feet, particularly at night. For a year or more she has been getting pale, and she thinks she has gained in weight.

In August last she noticed that her feet and ankles were swollen, the left much more than the right, and recently the left hand has seemed a little puffy. The face has been a little swollen and flabby for several months, and the eyelids become œdematous in the morning.

The patient had a pale yellow, very muddy complexion; the skin was dry, but there was no great puffiness of the eyelids, nor had she the broad features so characteristic of the myxœdematous facies. There were no folds of skin on the forehead, which showed a little brownish discolouration. The skin of the backs of the hands was dry, and not especially puffy, but she says that this morning the left hand was swollen. The neck was not swollen; there were no large supra-clavicular pads; the thyroid gland could be felt. The legs were swollen, particularly below the calves. The circumference at the ankle was almost the same as in the upper part of the leg. The swelling was particularly marked about the malleoli. There was no pitting like an ordinary œdema, but she says that at night the legs are very much larger than in the morning. There was no change in the voice. For some time she has been very despondent and low-spirited.

The pulse was 70; there was no increase in the tension. The temperature was 98.5°. She did not complain of coldness. There was no optic neuritis or retinitis. She did not pass a larger amount of urine than natural. It was normal in colour, specific gravity 1017, always contained a trace of albumin, but no tube casts.

The case had been regarded as one of Bright's disease, but her condition was certainly suggestive of myxœdema. She took three grains of the thyroid extract three times a day for a month before any change was noticed; then the legs became softer, particularly in spots, and by the middle of June the hardness and swelling had almost disappeared, and the legs were very much smaller. She became thinner; the appetite was better; the dryness of the skin had disappeared, and she was in very much better spirits.

In the latter part of the year she had to take larger doses of the thyroid extract. The change in her mental condition has been quite marked. Dr. Norris wrote that "her intellect is not at all dull, and she is full of energy, and says she feels stronger than she did." She has, however, had a little return of the swelling of the legs.

Throughout the year 1896 this patient has improved very much. She took a trip to England and returned greatly benefited. She has continued to take the thyroid extract, finding that if she omits it for a few weeks the swelling returns. Dr. Norris reports that perhaps the most striking feature in the case is the alteration in her disposition, which became quite natural again, and has remained so.

XV. REMARKABLE NOISY EXPIRATION IN CHRONIC EMPHYSEMA.

One evening a few years ago as I was travelling from Boston to New York in the Pullman car, a party of three or four gentlemen got on the train at, I think, Providence. One of them attracted immediate attention by the extraordinary noise which he made, and which could be heard by everyone in the car. It was a remarkable rumbling, noisy, gutteral expiration, very distressing to hear. The man sat in the compartment just across the aisle from me, and the most astonishing feature was that in spite of it he seemed quite comfortable and engaged in conversation and did not look distressed. He was a very large, well built man, and looked, indeed, the picture of health. In a few minutes the expiration became less noisy, but it still was prolonged, interrupted, and audible. The party moved away, having secured the drawing-room of the next car, and I made a little memorandum of the condition as one with which I had never met.

On April 10th, 1896, I recognized the owner of the remarkable noisy expiration in a Mr. ——, who was shown into my consulting room.

The thorax was very voluminous, barrel-shaped, the percussion note hyper-resonant even through the thick, heavily coated chest wall. Everywhere over the chest inspiration was quiet; in a few places piping sounds were heard. Expiration was very greatly prolonged, and accompanied with loud, whistling rhonchi. I have rarely heard such marked disproportion in length between the expiratory and inspiratory murmur. The pulse was good; the heart sounds were clear; evidently the compensation of the right ventricle was well maintained. He complained a great deal of distressing cough, and of the most extraordinary nocturnal paroxysms of dyspnœa, in which he had to sit up in a chair for hours at a time, leaning forward, and feeling all the time, as he expressed it, on the brink of suffocation.

He has lately for the first time had some swelling of the legs. For five or six years he has been troubled, particularly on any exertion, with loud noisy expiration. The air blubbers out, as he says, with a great deal of effort and noise, so that people do not like to have him about. In a way it is an exaggeration of the puffing and blowing which very stout people make on exertion, but in its staccato quality it was unlike any form of expiration I had ever heard. When perfectly quiet he could control it, but any exertion brought it on at once.

RETROSPECT
OF
CURRENT LITERATURE.

Surgery.

UNDER THE CHARGE OF GEORGE E. ARMSTRONG.

Treatment of Albuminuria by Reni-Puncture.

REGINALD HARRISON. "On the treatment of some Forms of Albuminuria by Reni-Puncture."—*British Medical Journal*, Oct. 17th, 1896.

In this paper Mr. Harrison relates the history of three cases in which albuminuria was present and in which, after a nephrotomy, the albumin was found to have disappeared. The first case was that of a youth who was suspected of having had scarlet fever three weeks before the date of operation, and who since that time had suffered from intense lumbar pain. Upon the kidney being exposed, it was found to be tense, and it was incised with the expectation of finding matter. Such was not the case however. There was a free discharge of blood and urine from the wound for some days, and in the course of ten days it healed soundly. From the time of operation, the excretion of urine greatly increased and the albumin gradually and completely disappeared.

The second case was that of a man of fifty who presented symptoms of renal calculus. The kidney was found to be large and tense, but its exploration did not reveal the suspected stone. A free discharge of blood and urine followed for some days. The urine, which before the operation had been largely and constantly albuminous, became quite normal and the patient remained in excellent health.

In the third case, a woman who had suffered from hæmaturia for a year and whose symptoms became greatly aggravated after an attack of influenza, was found to have pain on pressure over the left kidney, constant and increased albuminuria and a history of having previously passed a small calculus. The kidney was found to be swollen and tense, but no stone could be detected on exploration with the finger. A copious discharge of urine and blood from the wound during some days was followed by the patient's recovery, the urine becoming normal.

Newman of Glasgow, records two cases in which albuminuria ceased after the performance of an operation for fixation of the kidney. In both cases tube casts were present.

The author considers that the relief afforded to the kidneys by the loss of blood following upon the incision of the organ, is a proof of the beneficial action which exerts its influence by the relief of high tension, and furthermore prevents those changes in the kidney which eventually lead to various forms of Bright's disease. Iridectomy in glaucoma and puncture of the capsule of the testicle in cases of acute orchitis are examples of the beneficial effects of the relief of tension.

Mr. Harrison concludes his interesting paper by indicating the class of cases in which operative measures may be of benefit and which he illustrates by those cases of nephritis which are found consequent on an attack of scarlet fever. In a majority of cases, scarlatinal nephritis is of a temporary character, but in a number of cases, it is not so. These latter may be divided into two groups. The first includes those instances where death is imminent with more or less suppression of urine, and where after death, a most intense vascular engorgement is found. The second group embraces those cases where the renal symptoms do not tend to recovery. The author considers that instances will be found in these two groups where the measures advocated will be of service.

Mr. Hurry Fenwick *(British Medical Journal*, Oct. 31, 1896) states that digital exploration of the kidney is usually fraught with some danger. A quiescent, chronically inflamed kidney may become acutely inflamed, and in cases of recent acute inflammation, the renal tissue is so exceedingly friable and the hæmorrhage may be so profuse as to require nephrectomy. He advises releasing the kidney capsule along the convex border, or if great engorgement be present, puncture with a scalpel without digital exploration.

JABOULAY. "La régénération du goître extirpé dans la Maladie de Basedow et la Section au Sympathique cervical dans cette maladie."—*Lyon Médical*, March 22, 1896.

JABOULAY. Section du Sympathique cervical dans l'exophtalmie.—*Lyon Médical*, May 31, 1896.

In the first of these papers, M. Jaboulay calls attention to the fact that the thyroid gland in cases of Graves' disease does not undergo the same changes as does the ordinary enlarged thyroid after operation with the intention of effecting a diminution in its volume. Instead of the excision of part of the gland or a division of the isthmus leading to atrophy, the gland soon reaches its former size, and may possibly proceed to still greater enlargement.

Having operated upon the thyroid of a patient with exophthalmic goître five times in three years, M. Jaboulay decided to divide the cervical sympathetic, which is now considered to play so important a rôle in the ætiology of the disease. He accordingly did so at a point between the superior and middle ganglia. The immediate result was excellent: diminution in the palpitation and tremors and also in the exophthalmos. After the lapse of a month, the palpitation and tremors reappeared and the goître increased in size, but the exophthalmos remained permanently cured.

In his second paper M. Jaboulay briefly records two other cases of exophthalmic goître in which section of the cervical sympathetic led to a great diminution in the protrusion of the eyeballs. He also mentions the case of a young man whose right cervical sympathetic nerve was divided with the intention of modifying the circulation in the corresponding cerebral hemisphere. After operation, the eye on the side which was operated upon, had the appearance of being set more deeply in the head, and of being more completely covered by the lids.

From these cases Mr. Jaboulay concludes that section of the cervical sympathetic should be practised in cases of Graves' disease for relief of the exophthalmos, and all the more so that some amelioration in the tachycardia and the tremors may result as well.

E. J. Semple.

Recollections of Surgery before the Use of Anæsthetics.

The Boston Medical and Surgical Journal, published on the 7th January, 1897, contains eight articles on the above subject from the pens of Benjamin Eddy Catting, M.D., A.M., A.A.S., T. M. Mankoe, M.D., William Ingalls, M.D., Samuel L. Abbot, M.D., Isaac F. Galloupe, M.D., C V. Bemis, M.D., W. G. Wheeler, M.D., and H. A. A. Beach, M.D.

These reminiscences are interesting and valuable, as they are written by a group of men, rapidly getting smaller. But few operating surgeons of to-day have had any experience of operations of a serious character done without anæsthesia, and it is fortunate that those who are able have put on record their experience in operative surgery before the discovery of anæsthetics. It is now over fifty years since ether was first given in America for a severe surgical operation in the Massachusetts General Hospital on the 16th October, 1846. It was given as far back as 1818 for asthma, and singularly enough the greatest care was used not to carry it to unconsciousness for fear of fatal results, several cases of death having been recorded from that cause.

The first recorded case of the extraction of teeth under ether was on the 30th September, 1846, by Dr Morton. The preparation for an operation in those pre-anæsthetic days included means to hold the patient as quiet as possible by means of mechanical appliances and strong well trained attendants.

Operations were dreaded alike by patient and surgeon; they were all alike, full of dreaded horrors to patients, and not without terror to the onlookers. Some patients raved and stormed, roared out heavy groans and heart-rending shrieks.

The use of anæsthetics was not adopted without opposition. There were two opinions on the safety, availability and wisdom of the measure. The younger men were as a rule enthusiastically in favour of giving the plan a trial. The older men, embracing many of the best and most eminent practitioners, felt hesitation as to its expediency and some even opposed the proposal as dangerous and unjustifiable. The opposition contended that the prolonged etherization was a menace to life. Secondly, it was thought that, as the whole nervous system was under the paralysing influence of the anæsthetic, the circular coats of the vessels would lose their contracting power, the blood vessels would not retract and contract, as we usually observe them to do after section, and that therefore there would be much greater difficulty in controlling hæmorrhage, than there would be if the nerves retained their sensibility. Thirdly it was thought that on account of the general disturbance of the system and nausea following the administration of ether, reparative power would be lessened, primary union more rarely attained and that suppuration would be a more common result.

It will hardly be realized in our day how warmly these questions were then discussed, nor is it necessary in the light of our abundant experience to point out their fallacy.

The question is often asked, what did surgeons do to mitigate the sufferings of operations before the discovery of anæsthesia. Practically they did nothing. Various attempts were made in that direction. Cold was applied by various refrigerating processes, to the point of benumbing the parts, care being taken to stop far short of congelation; but all these trials had the fatal defects that they could not be maintained during the operative procedure, and that they only affected the surface of the wound, any excursion of the knife into unnumbed parts giving pain. Opium was naturally suggested and was frequently used, but, while its power of soothing pain after operation was freely recognized, its power of preventing pain during operation was disappointing.

There was a great difference in the behaviour of patients under operation. Some showed great fortitude and courage, but the majority showed their suffering by groans and cries of more or less intensity, which they seemed to have no power to control, and which, indeed, seemed to afford a sort of relief to their sufferings. It was noted that instances of superior fortitude were more common among women than among men.

One effect of the screams and groans of the patient was seen among the young students during their first month in the operating room. It was not at all unusual for a student to faint and be carried out, and such an occurrence called forth no comment. One rather amusing experience is related by Dr. Markoe. The operation was on a very extensive necrosis of the tibia in a fine manly looking sailor. He bore the first incisions without a murmur, but when the tedious and painful process of stripping the integuments from the involucrum had been going on some little time, he turned to one of the assistants and asked in a whisper, "Could I have a chew of tobacco?" It was given to him and it seemed to comfort him and brace him up. When the exasperating hammering and chiselling had been going on for some time he asked for another chew, which was given him, and seemed to reanimate his courage. The chiselling was long and tedious and he once more turned to the doctor and said. "Doctor, doctor, give me another chew of tobacco, and give me a damned big one this time." This was done and under the stimulating influence of a "damned big chew" the operation was completed, having occupied the best part of an hour, during which not one word of complaint was uttered and not even a groan passed his lips. Many patients seemed to suffer more from the touches of the sponge, the picking up and ligature of the vessels, especially if other tissue and nerves were included, and from the puncture of the needle in closing the wound than during the main steps of the operation.

In reducing dislocation of the hip, muscular relaxation was sometimes induced by injecting an infusion of tobacco into the rectum.

Of course in those days exploratory operations were seldom performed. Nervous shock was a reality. The fright, appreciation of danger and anxiety as to the result, caused a depression of the vital forces. These old surgeons can appreciate the tremendous boon to humanity of anæsthetics much more fully than those of us who came upon the scene when ether and chloroform were in general use.

Geo. E. Armstrong.

Pharmacology and Therapeutics.

UNDER THE CHARGE OF A. D. BLACKADER.

Formaldehyde and its Applications.

TRILLAT, A. "La Formaldehyde et ses applications pour la désinfection de locaux contaminés."—Paris, 1896.

WALTER, K. "Zur Bedeutung des Formalins bezw. Formaldehyds als Disinfectionsmittel".—*Zeitschrift für Hygiene und Infectionskrankheiten*, Bd. 21, H. 3.

COUTTS, FRANCIS J. H. "Formaldehyde."—Retrospect in *Medical Chronicle*, December, 1896.

JOHNSTON, WYATT. "Disinfection by Formaline."—*Second Annual Report of the Board of Health, Province of Quebec, for the year ending* June 30, 1896.

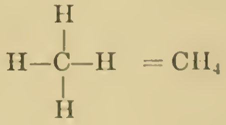
ALEXANDER, W. G. "An Ideal Germicide."—*New York Medical Journal*, January 9, 1897.

During the past few years the action of formaldehyde or formaline as a disinfectant has been carefully studied in many of the European laboratories, and many papers on its properties have appeared in the journals during the past twelvemonth. Its chemical activity and reactions, its remarkable powers of penetrating animal tissues without losing its efficacy, and the possibility of its formation under the influence of the sun's rays, and in this way playing an important role in vegetable physiology, give this drug a special interest to the scientist.

Formic aldehyde CH_2O is produced, when, by means of a specially constructed lamp, the vapour of methyl alcohol (CH_3OH), is passed over an incandescent platinum hood or mantle. The following formula represents the reaction: $CH_4O + O = CH_2O + H_2O$.

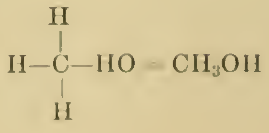
It may be considered to form one of a series formed by the increasing oxidation of methane.

Methane:



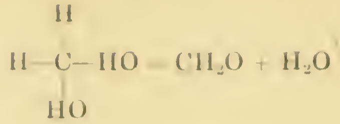
$$\begin{array}{c} H \\ | \\ H-C-H \\ | \\ H \end{array} = CH_4$$

Methyl Alcohol:



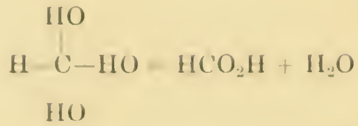
$$\begin{array}{c} H \\ | \\ H-C-HO \\ | \\ H \end{array} = CH_3OH$$

Fromic Aldehyde :



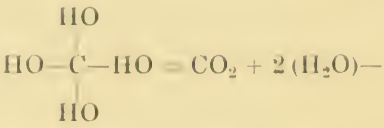
$$\mathrm{H{-}\underset{HO}{\overset{H}{C}}{-}HO = CH_2O + H_2O}$$

Formic Acid :



$$\mathrm{H{-}\underset{HO}{\overset{HO}{C}}{-}HO = HCO_2H + H_2O}$$

Carbonic Acid :



$$\mathrm{HO{-}\underset{HO}{\overset{HO}{C}}{-}HO = CO_2 + 2\,(H_2O)}—$$

Formic aldehyde at ordinary temperature is a colourless gas with an extremely irritating odour. At a temperature of 20° C. it assumes the polymeric form, known as paraformaldehyde, by the union of two molecules. This is a white substance, unctuous to the touch and soluble in water and alcohol. Trioxymethylene is produced by the union of three molcules and is a white powder, evolving a strong odour of formic aldehyde.

Formol or Formaline is supposed to be a solution of paraformaldehyde in water and is of a strength of about 40 per cent.

Formaline has a bactericidal action almost equal to that of corrosive sublimate, whilst it is much less toxic. One part in 20,000 is sufficient to slow the ammoniacal fermentation of urine, and 1 in 4,000 inhibits it altogether. Dr. Wyatt Johnston, in his report, says of it: "As the result of over a year's personal use of this substance, I can unhesitatingly recommend it as being a rapid and certain germicide in the strength of from ½ to 1 per cent. and upwards. Its destructive effect upon spores is relatively high, and it has the very great advantage that this efficacity is not impaired by contact with albuminoid material, something which can scarcely be said about any other substance. If in stronger (2–4 percent.) solutions it has remarkable power in penetrating animal tissues, and disinfecting solid masses of flesh in a manner which even strong mineral acids are incapable of doing. Its action is extremely rapid and permanent. It combines strong germicidal properties with those of an unusually good deodorant. It has little or no effect upon fabrics, instruments, &c., through continued contact, and its vapours are not destructive to, or liable to cause bleaching or spotting of clothes. In the form of vapour, this substance possesses remarkable germicidal properties, destroying dried anthrax spores and killing all the germs in dust after an exposure of only two to four hours. It may be mentioned in comparison that carbolic acid in 3 per cent. solution requires 24 hours to destroy anthrax spores. The action of formaldehyde can be promptly controlled and checked by means of ammonia, with which it forms an inert and harmless compound."

Formaline has little influence on the frog's heart, unless in solutions over 1 per cent. in strength. Given internally, very small doses are sufficient to raise blood pressure, and markedly affect respiration. Doses exceeding 1 c.c. per kilo of body weight rapidly produce death; doses of 0.1 c.c. are poisonous if introduced into the circulation, and even smaller doses produce marked symptoms of irritation. A powerful action on the nervous system is indicated by the resulting analgesia, lowering of temperature and convulsions.

When brought into contact with the living skin undiluted formalin exerts a kind of tanning effect, making the skin impermeable and finally brings about its necrosis. This action depends upon the property of formalin of very readily penetrating living and dead animal tissue and combining with it. The tissue is destroyed without suppuration or formation of a wound.

As a disinfectant, formaline must be regarded as occupying a most important position. Dr. Alexander, in a recent address, says of it: Among the number of antiseptic substances known at present there are only a few which are capable of destroying all germs of organic life in 24 hours. It has been proved by numerous and very elaborate experiments that after an hour's exposure to a one *per mille* solution of formalin the most resistant forms of micro-organisms were destroyed. Formalin, therefore, is equal to corrosive sublimate in germicidal power, and when albuminoids are concerned, superior. Great importance is attached to the applicability of this antiseptic in the form of a gas or vapour. Only in this way can we conveniently disinfect large rooms, and more delicate articles in closed apparatus. Experiments carried out with formalin vapour show that a 2½ per cent. volume of its vapour destroyed all traces of organic life in a quarter of an hour. When allowed to evaporate in the presence of wool, gauze bandages, &c., the vapour condenses upon the fabrics in a solid form (paraformalin), and thus disinfects them; on evaporation again paraformalin becomes dissociated into formalin vapour and exerts an antiseptic influence upon its surroundings.

Several observers have experimented with formaldehyde to test its efficacy in the disinfection of rooms and some have found difficulty in its effective application. Wyatt Johnston writes as follows: "Kinyoun, of Washington, has recently shown that by having the formaline gas perfectly dry even all the upholstery and bedding of an ordinary Pullman car can be completely sterilized by filling it with gas. I can testify personally to the perfect efficacy with which one can disinfect in an ordinary exsiccator containing formaline such articles as diphtheria outfits, folded papers, &c., and varnished or painted objects, which cannot be heated and are injured by the application of antiseptic solutions. Many of the appliances devised for formaline disinfection are nearly worthless for ordinary sanitary purposes. The formaline lamps at present in the market do not liberate a sufficient volume of the gas to penetrate folded clothing or bedding. They also generate a large amount of water vapour during the act of burning, which renders the gas much less penetrating than if used dry. Used in this way, however, it will disinfect thoroughly the exposed parts.

It has been shown by Roux, Trillat, Kinyoun, and other observers that the addition of calcium chloride to the formaline solution causes the gas to be evolved more rapidly, and in a more dry and effective form. Formaldehyde gas undoubtedly ranks far above sulphurous acid as a disinfectant. There is still room for simplification in the apparatus and technique, but satisfactory disinfection by formaline seems now to be an accomplished fact. The chief drawback to its general adoption at present is its expense.

Formaline would appear to be particularly suitable for the disinfection of books, as the vapour is not detrimental in any way to the books, whilst it is very prompt in its action. Horton found that in a closed space books can be thoroughly disinfected by using 1 c.c of commercial formaline to 300 c.c. of air.

Dr. Alexander considers formaldehyde the "ideal germicide, deodorant, and antizymotic." He has used it in his practice for a year. He quotes De Buck and Vanderlinden, as having used it successfully in one-half per cent strength for washing hands and instruments, cleansing site of operation, and for rendering infected wounds, cavities, and sinuses, antiseptic. Formaline does not spoil the edge of the knife, not seeming to attack metal at all. Dr. Alexander has used the pure 40 per cent formaline very successfully in chancroid and chancre, applying it locally, a single application being sufficient to cause the ulcer to heal rapidly. In ten cases of gonorrhœa he used a one-half per cent solution, injected three times a day, with satisfactory results; he found the treatment free from the pain and irritation usually observed after the use of sublimate and other solutions.

De Smet claims good results from the use of formaldehyde in gonorrhœa in women. Sixty cases, some very obstinate, were cured. The vulva was washed with a 1 in 1,000 solution, and the vagina douched through a speculum with a solution, varying from 2 in 1,000 to 5 in 1,000. If the uterine cavity and cervical canal were involved, some of the same solution was injected.When there is laceration of the cervix, tampons soaked in 1 in 1,000 of formaldehyde are left for two or three hours in the vagina. When fungous endometritis is present, the curette must be first applied. The applications give rise to no pain, and may be used daily, or every second day.

Solis-Cohen has, during the past year, seen such good results in the treatment of tuberculosis of the larynx, alike in infiltrative, ulcerative, and vegetative cases, by means of formic aldehyde solutions, that he is tempted to believe that in this agent we have a means of treatment superior to any other that he has ever used. He uses the commercial formaline, diluting it to the strength required, which ranges from one-half to four per cent of formic aldehyde—that is, from one to ten per cent of the commercial formaline, which contains 40 per cent. of formaldehyde. Before making the applications the parts should be thoroughly cocainised, or otherwise the application to the mucous membranes causes an intense burning, stinging, and even strangling sensation. The mode of application is similar to that employed with lactic acid. The parts are thoroughly rubbed with the formaldehyde solution after previous cleansing and cocainization. Beginning with the weakest solution, the strength is increased up to 10 per cent of the commercial formaline, which corresponds to four per cent of pure formaldehyde. This is the strongest solution he has found necessary to employ.

A. D Blackader.

Therapeutic Suggestions.

Euquinine.—Prof. Carl Von Noorden, of Frankfort-on-the-Main, has an article on euquinine in the *Centralblatt für innere Medicin* for November 28th. He describes it as the ethyl carbonic acid ester of quinine. It occurs in white needles which are soluble with difficulty in water, but readily soluble in alcohol, in ether, and in chloroform. It has an alkaline reaction and forms crystalline salts with acids. The chloride is readily soluble in water, the sulphate dissolves with some difficulty, and the tannate is almost insoluble. The alkaloid itself, which is the form in which Von Noorden has used euquinine most largely, is entirely tasteless at first, but has a slight bitter aftertaste, reminding one of the taste of a very weak solution of quinine. If it is taken in sherry, milk, soup, cocoa or the like, no unpleasant taste is perceived. Healthy persons can take fifteen grains, and in most instances twice that amount, daily, without experiencing any unpleasant feeling in the head. Even after a prolonged use of these doses there were no disturbances attributable to them in any of his patients. Euquinine is said to have the characteristic remedial virtues of quinine without its unpleasant properties, and may be used in all cases in which that drug is indicated.—*N. Y. Medical Journal*, Jan. 2, 1897.

Death Consequent on the Administration of Nitrous Oxide Gas as an Anæsthetic.— Dr. H. A. Hare (*Therapeutic Gazette*, December, 1896,) calls attention to the danger in persons suffering from atheromatous vessels from the marked rise in arterial pressure produced by the administration of this drug, and relates an instance in which rupture of a blood-vessel in the brain took place, apparently, as the result of this. A man between 50 and 60 years of age, who had on several previous occasions taken nitrous oxide in the dentist's chair, on this occasion took it apparently as usual, and returned to consciousness with the usual rapidity. He had left the chair to rinse out his mouth at the washstand, and while doing so complained of a feeling of numbness in the right hand—extending up his arm and then rapidly to the lower extremity. He soon afterwards became unconscious. When seen by Dr. Hare shortly afterwards there was absolute insensibility, which, notwithstanding the use of venesection and other measures, deepened into coma, and death took place about twelve hours after taking the anæsthetic.

The Treatment of Threadworms and Tapeworm in Children.—Dr. J. Comby, (*La Medicine Moderne*, July 1, 1866; (*The Practitioner*, December, 1896,) after reviewing the usual methods of treatment, recommends the administration of anthelmintic remedies and at the same time the employment of local parasiticide applications. For three consecutive days the following powder is given in the morning fasting:—

Santonin	grm. ·05 (gr. ¾)
Calomel	grm. ·10 (gr. 1½)

At bedtime the interior of the bowel is anointed by inserting the finger smeared with the following ointment:—

Glycerine of starch	20 grammes.
Mercurial ointment	10 grammes.

This dose is suitable for children of four to six years of age. If the treatment is not entirely successful, a second course may be repeated after one or two weeks interval.

The same writer, in a subsequent article, (August 1, 1896,) recommends the following procedure in the case of a tapeworm. After one day on strictly milk diet the following draught is administered early in the morning fasting:—

Ethereal Extract of Male Fern	grms. 6. (ʒiss)
Essence of Turpentine	grms. 1. (♏ XV)
Syrup of Orange Flowers	grms. 30. (℥ i)
Peppermint water	grms. 50. (℥ iss)

Half an hour after this give 20 grammes of castor oil. If unsuccessful, two or three months interval may be allowed before repeating the treatment.

A. D. Blackader.

Ophthalmology.

UNDER THE CHARGE OF J. W. STIRLING.

The Diagnostic Value of Light Perception.

R. WALLACE HENRY. "The light perceptive power as an aid to diagnosis and prognosis in diseases of the eye."—*Ophthalmic Review*, February, 1896.

This very able article enforces the great importance of the examination of the light sense in all cases of eye disease.

The details of Dr. Henry's researches are very extensive, and are the results of investigations carried out in one hundred and seven cases and on two hundred and three eyes.

Dr. Henry has originated a very simple and practical photometer. It consists of a long box, having a blackened interior with curtain attachment at the end to which the observer's head is applied ; this black cloth curtain is drawn over the observer's head and tight round his neck, thereby excluding all light ; at the other end of the box is an opening into which fit nine small panes of opal glass of an ascertained constant transparency. These panes fit one behind the other, and can be separately removed or replaced. At a distance of $\frac{1}{3}$ metre in front of this opening is placed a candle of a definite brightness, behind which is a shade.

If the observer sees the light first through, say, seven panes, then his light sense can be defined as No. 7, if through five panes it is called No. 5, and so forth.

In healthy eyes the light sense begins to diminish after 30 years of age, and more markedly after 60 years.

Hypermetropes of 4 dioptres and upwards have a diminished light sense, whilst myopes have a normal light sense.

The light sense was most notably diminished in those cases in which the retina was affected, whether through local diseases of the eye or through morbid states of the blood.

It further appears that the nerve fibres transmitting the light impressions to the brain are more resistent than those conveying the form and colour sensations.

For example in toxic retrobulbar neuritis and in hemianopsia, the form and colour sense can be clearly obtunded whilst the light perception is unaffected.

In cases of amblyopia with normal fundus or only slight pallor of the temporal half of the optic disc, and with central scotoma for colours, if the light sense is normal, the cause is toxic; the limits of the field being normal, it is due to tobacco abuse, or if there is some concentric limiting of the field it is due to abuse of alcohol.

The prognosis in both cases is good; in the former the course covers months, in the latter, weeks.

If, however, the light sense be diminished, it is not likely a pure case of toxic amblyopia, and the urine should be examined for albumen or sugar.

In albuminuria and diabetes diminution of the light sense is of value as indicating that we may soon expect the typical changes in the retina; the sudden reduction of the light perception being due to the diminished nutrition of the retina which precedes these forms of retinitis.

With a normal fundus, a slight failing of the form and light sense with concentric limitation of the field of vision points to beginning optic nerve atrophy, the prognosis being very grave.

In cases of simple glaucoma or optic atrophy, where the diagnosis is doubtful, the light sense is much more reduced in the former.

In optic neuritis, and also in choroiditis, a decided lessening of the light sense points to implication of the retina.

Hence it follows that the greatest diminution of the light sense is found in cases of the retinal disease, and especially in retinitis pigmentosa.

Eye Diseases and Blindness Among Negroes.

J. Morrison Ray. "Observations upon eye diseases and blindness in the coloured race."—*N. Y. Medical Journal*, July 18, 1896.

This paper is of much interest and is the result of observations covering a large number of cases.

The negro suffers to a greater percentage from the graver forms of eye disease than the white, and blindness seems to be more prevalent among the coloured race than the white.

There is a well defined difference in the two races in their proclivity to various forms of eye disease.

The negro is markedly liable to suppurative forms of keratitis and to iritis, associated with condylomatous developments.

On the other hand, the negro enjoys a peculiar incomprehensible immunity from granular lids and a lesser liability to cancerous growths in this locality.

Eye diseases, as a rule, follow a more disastrous course, and consequently blindness is very common.

Ocular Symptoms in Abdominal Typhus.

W. EBSTEIN. "Primary motor paralysis in the oculo-motor tract and other post-typhoid complications in a case of abdominal typhus." —*Archiv. f. Path. Anat. Physiol. und Klin. Med. Virchow,* Band 145, July, 1896.

The case was a student aged 20, who, with the exception of diphtheria at the age of three years, was previously healthy.

He was taken ill in a house in which there had been, recently, cases of typhoid fever.

His symptoms were cough and pain in the chest, a brownish discharge for three days from both ears, ptosis, and paralysis of the left internal rectus, characteristic typhoid temperature and pulse.

There was fever until the 19th day, when the temperature became normal and remained so for a few days, but was then followed by a relapse and high temperature.

Convulsions and cramps of the left side occurred six weeks after the first onset; tonic, then clonic spasms of the left facial nerve, and later of the right arm and both extremities.

He bit his tougue, and the pupils were dilated and immovable during the convulsions.

The urine was concentrated and scanty, with no sugar, but little albumen and many hyaline casts.

On drinking a little milk, a bleb like eruption appeared on the body

The patient remained unconscious and had involuntary bladder and bowel movements, clonic cramps of the eye muscles and convergent strabismus, hyperæsthesia of the lower extremities.

Recovery after four months.

Ebstein considers the symptoms as due to cerebral irritation or a light inflammation.

The primary oculo-motor paralysis was due to a low peripheral neuritis.

Cancer Serum and Formal in Malignant Tumour.

NIEDEN. "Use of the Emmerich-Scholl's Cancer Serum and Formal in inoperable ocular tumours.—*Bericht der 25 Ophthal Congress in Heidelberg,* May, 1896.

The treatment of tumours by erysipelas is not new. Thirty-one years ago Busch recommended inoculation of erysipelas in ulcerating tumours.

Nieden reported the healing of two cases of irido-choroiditis after an attack of erysipelas.

Nieden recently treated two cases of inoperable ocular tumours with cancer serum, but unsuccessfully.

After failure of the serum he injected a 2% formal solution which caused sloughing of the outer parts and seemed to limit the progress of the tumour.

Nieden thinks the formal treatment might prolong the life of such patients.

Eye Disease and Gout.

A. WANGENMANN. "Eye disease and gout."—*Bericht der 25 Oph. Cong. Heidelberg*, 1896.

Gout causes seroplastic inflammations with or without uric acid concretions.

Wangenmann refers to many cases of scleritis, iridocyclitis with concretions between the retina and choroid, lumps in the sclera and a characteristic case of episcleritis periodica fugax.

Gout may indirectly cause many eye diseases, especially of the blood-vessels and early atheroma; in this connection may be noted recurring vitreous diseases ending in cataract, detachment of retina, retinitis hemorrhagica, and sclerosing corneal diseases.

Argentamin In Eye Diseases.

KARL HOOR. "Æthylendiamin silver phosphate in ocular therapeutics.—*Klin Monatsblatter für Angenheilkunde*, July, 1896.

This silver salt is a preparation of phosphate of silver in 15% solution of æthylendiamin, which gives it an alkaline reaction. It appears to have a greater bactericidal power than the usual nitrate of silver solution; it penetrates deeper and deeper, is equally astringent, causes less pain and can be used in a more concentrated form.

The following are the results :—

1. It possesses all the advantages of nitrate of silver and none of its disadvantages.

2. The unpleasant subjective symptoms of nitrate of silver are wanting.

3. It penetrates the tissues more deeply, and thereby intensifies its antiseptic action.

4. It is especially useful in trachoma.

5. It is excellent in cases of conjunctivitis, catarrhal ophthalmia, follicular catarrh, purulent conjunctival inflammations, and blennorrhœa of the new-born and adults.

6. The result in each case was what at least might have been expected with nitrate of silver.

7. In cases with free secretion, it may be applied three or four times a day, or oftener, without producing any irritation.

8. Corneal complications and pannus offer no contra indications to the use of the salt, and it is even well tolerated by hyperemic or inflammatory conditions of the iris or ciliary body.

This silver phosphate preparation is most serviceable in 5% solution, and must be kept in dark bottles else it will decompose.

J. W. Stirling.

Reviews and Notices of Books.

Rough Notes on Remedies. By Wm. Murray, M.D., F.R.C.P., Lond., Newcastle on Tyne. Second edition. London, H. K. Lewis, 136 Gower Street, 1897.

A small, but excellent contribution to practical therapeutics. It contains six chapters, dealing with:

I. Arsenic in Diabetes, Chorea and Asthma.
II. Belladonna in Renal Calculi.
III. Mercury in Heart Disease.
IV. Calomel in large doses.
V. Nitrate of Silver in Epilepsy.
VI. Our Mistakes.

The author has pursued a line of work, which, if more generally followed by members of the profession, would result in more useful and definite information on many of our old remedies. We hope Dr. Murray will continue and further extend his praiseworthy work. J. S.

An American Text-Book of Physiology. By Henry P. Bowditch, M.D.; John G. Curtis, M.D.; Henry A. Donaldson, M.D.; W. H. Howell, Ph. D., M.D.; Frederic S. Lee, Ph. D.; W. P. Lombard, M.D.; Graham Lusk, Ph. D.; W. T. Porter, M.D.; Edward T. Reichert, M.D., and Henry Sewall, Ph. D., M.D. Edited by William H. Howell, Ph. D., M.D., Professor of Physiology in the Johns Hopkins University, Baltimore. Fully illustrated. Philadelphia, W. B. Saunders, 925 Walnut Street, 1896.

A volume of over one thousand pages, well printed and beautifully illustrated, written by the chief physiologists in the leading universities of the United States; such is the work under consideration.

The fact that the editor considers it impossible for any one physiologist to be sufficiently conversant with the advances made in physiology to write well on them all is evidence of great strides being made in this subject. For the practical physician the subject is one of first importance. In this volume we will find probably more fully than in any other in the English language an account of the present status of our physiological knowledge.

Dr. Lombard contributes the article on the general physiology of muscle and nerve. Dr. Howell writes on secretion, the chemistry of digestion and nutrition, the movements of the alimentary canal, bladder and ureter and on the blood and lymph. The articles on the circulation are contributed by Drs. Curtis and Porter. Dr. Reichert deals with respiration and animal heat, the latter article being a very valuable one. Dr. H. P. Donaldson is the author of the chapters on the central nervous system. It is a very clear and able discussion of a difficult subject.

The chapters on the special senses, written by Bowditch and Sewall, are worthy of all praise.

Dr. Lee writes the article on reproduction, and Lusk, that on the chemistry of the animal body. J. S.

A Treatise on Surgery. By American Authors. For Students and Practitioners of Surgery and Medicine. Edited by Roswell Park, A.M., M.D., Professor of the Principles and Practice of Surgery and of Clinical Surgery in the Medical Department of the University of Buffalo, Buffalo, New York; Member of the Congress of German Surgeons; Fellow of the American Surgical Association; Ex-President Medical Society of the State of New York; Surgeon to the Buffalo General Hospital, etc. Volume I. General Surgery, with 356 engravings and 21 full-page plates in colours and monochrome. Lea Brothers & Co., Philadelphia and New Yoak, 1896.

This is another addition to the already long list of surgical works recently published. Less full than Dennis' work, and yet not by any means merely a hand-book.

It bears the unmistakable evidence of its well known editor, as no less than sixteen of the chapters in the first volume are from his pen.

Part I., dealing with surgical pathology, by Roswell Park, is full, clear, up-to-date, and very tersely written. The chapter on the surgical pathology of the blood, contains much that is of clinical value.

The remaining chapters are written by teachers and hospital men having large fields of observation and they have done their work with great care.

The first volume dealing with general surgery and its principles is as a whole a very creditable work. Students and practitioners will find in it a great deal of valuable information presented in an attractive and interesting manner. G. E. A.

Royal Infirmary Clinics. By Alexander James, M.D., F.R.C.P., Eng., Physician to the Royal Infirmary, Edinburgh. Edinburgh: Oliver and Boyd, Tweeddale Court, 1896.

This small, well printed volume contains sixteen clinical lecturs delivered by Dr. James at the Royal Infirmary, of Edinburgh. Two of the lectures on chronic nephritis are especially worthy of commendation. A lecture on an interesting case or Addison's disease is illustrated by two beautifully coloured plates. Although intended for the students of the author's class, the lectures will well repay perusal. J. S.

Society Proceedings.

MONTREAL MEDICO CHIRURGICAL SOCIETY.

Stated Meeting, December 12th, 1896.

GEO. WILKINS, M.D., PRESIDENT, IN THE CHAIR.

Spina Bifida, Operation with Transplantation of Bone to Close the Orifice.

Dr. G. E. ARMSTRONG exhibited a child upon whom he had performed this operation.

Dr. WYATT JOHNSTON had seen the part removed and thought it consisted of atrophic nerve elements, some showing multipolar cells.

Dr. J. B. McCONNELL pointed out that the benefit which might accrue from an operation depended upon the nature of the tumour, and that it might be misleading to have a favorable result reported in regard to a case of spina bifida, unless the variety was indicated. For where it was a simple meningocele, there was no difficulty, but in a hydro-myelocele, in which the sac consisted of the flattened-out spinal cord, and in meningo-myelocele the condition was generally considered to be one in which operation was not to be recommended, as it was likely to endanger the patient.

Vesical Calculi.

Dr. WILLIAM GARDNER exhibited a collection of calculi and sand removed from the bladder of a woman of 70, a patient of Dr. J. T. Finnie, of this city. There were thirteen stones, all facetted, of the size of chestnuts, besides numerous others smaller, of all sizes down to that of a grain of the finest sand. The patient had suffered for the last twenty years from procidentia uteri. The displacement had not prevented her being active, and had not apparently caused very much suffering until within the last few weeks. Four or five weeks previous to operation she contracted pneumonia, from which, notwithstanding her advanced age, she recovered. During convalescence she began to suffer intensely from pelvic tenesmus with violent pain. The urine was fetid and turbid. On handling the completely prolapsed pelvic organs the sensation conveyed was that of a bag of marbles. The stones were removed through an incision made in the base of the bladder by the knife of the thermo-cautery, care being taken to avoid the muscular fibres at the vesico-urethral orifice. None of the calculi were encysted; the bladder, however, was sacculated in parts. It was thoroughly irrigated with warm boracic acid solution. The cut edges of the vesical and vaginal mucosa were then brought together by a continuous fine catgut suture. The narrator said that the case was unique in his experience. Calculus of the urinary bladder was extremely rare in women, but in this case the extraordinary accumulation, which must have been forming during a period of several years, was very remarkable. The operation of cystotomy was selected for the removal of the stones in this case, for the reason, that the alternative procedure of dilatation of the urethra would inevitably, especially in the tissues of an old woman, have resulted in permanent incurable incontinence of urine from destruction of the sphincter of the bladder. The incision was kept open to drain and rest the bladder, so facilitating the cure of the cystitis. When the cystitis had been cured and the parts otherwise become healthy, the closure of the artificial fistula would be a comparatively easy operation. The relief to the symptoms had been complete.

Appended was a report of the weight and chemical composition of the stones, by Dr. Ruttan, Professor of Practical Chemistry in the Medical Faculty of McGill University.

"The total weight of the calculi (almost dry) was 265 grammes (or 9 ounces, 150 grains). I find that each of the larger calculi has a nucleus of uric acid, stratified with a little phosphate; when examined under a lens, the nucleus is surrounded by a deep layer of mixed phosphates of lime, being chiefly neutral calcium phosphate, and quite free from uric acid, the next layer is chiefly uric acid, but also has fine lines of phosphate in it, and it tends to break into layers. Outside of this is the outer coating, white, composed of phosphates, chiefly triple phosphate carrying a little uric acid. The fine calculi, seed-like forms, are uric acid, and facetted like biliary calculi. All show the marks of having grown in a confined space and of having been closely packed. All calculi from the size of a pea to the largest have the history of the larger ones above."

Dr. F. J. SHEPHERD asked if the inflammation was considered due to the presence of the calculi or to the prolapsus. If due to the former he did not understand the necessity of keeping up drainage, as in the male bladder removal of the cause is followed by the cure of the inflammation.

Dr. J. C. WEBSTER said that there was no analogy between the male bladder containing calculi and the female viscus in the condition of prolapsus described by Dr. Gardner. The anatomical conditions as shown by frozen sections were entirely different. In the female, the most dependant part of the bladder being below the urethral orifice, acted as a *cul-de-sac* for the retention of stinking urine. He had seen one somewhat similar case, but there had been no large calculi present. The bladder was drained, and subsequently an operation performed for the prolapse.

Dr. GARDNER replied that immediate closing of the bladder was carried out in a healthy organ, but in such cases as these he preferred to follow the rule, as laid down by Emmet, and drain.

Typhoid Perforation.

Dr. G. E. ARMSTRONG reported a case of operation for perforation of the bowel in typhoid fever and Dr. Wyatt Johnston exhibited specimens from the case. (See page 601.)

Dr. J. G. ADAMI stated that Dr. Armstrong's case was the sixth in which the operation might be said to have been followed by a certain amount of success, as the patient had lived for six weeks after its performance Of the six cases, four had been reported from America.

He drew attention to several interesting points. First, with regard to the part played by the omentum. When, some time previously, he had read a paper on this subject, Dr. Lafleur had pointed out how rarely protective adhesions followed perforation in typhoid fever, as there was but little inflammatory lymph thrown out. Here, however, this part was played by a little tag of omentum which closed in the wound. It must be admitted, that in typhoid generally, there was singularly little power of repair of wounds or perforations. This being so, it was inevitable that all operations in typhoid must be attended with but doubtful success, and there must be a large number of failures. Hence other auxiliaries to repair must be sought after. He would suggest that the formation of an artificial anus above the usual region of ulcers, that is four to six inches above the valve, with rectal feeding, might insure physiological rest and prevent irritation of the lower part of the gut by fæces. He asked Dr. Armstrong whether such a course was feasible.

Dr. T. G. RODDICK said that the same idea of putting the diseased part at rest, by forming an artificial anus, had occurred to him during the reading of the paper. This, with careful drainage, would make it almost impossible for ulceration to progress. It remained a question, whether the change of diet from milk to animal broths, etc., affected the ultimate result. He had pleasure in congratulating Dr. Armstrong on his success in closing the original perforation, and in thus prolonging to such a degree the life of his patient.

Dr. WM. GARDNER asked if anything had been done in the way of securing the omentum to the opening, or where the latter was scanty of turning down a portion and suturing it over the opening. He had noticed in Dr. Johnston's account of autopsies on three cases, that the sutures had held firm, so probably the patient had died from the effects of the peritonitis.

Dr. F. J. SHEPHERD had hoped that this was going to be one of the successful cases, but the difficulties were very great. It was a question, whether the original peritoneal inflammation had not continued in spite of the careful washing out. Patients suffering from typhoid had not much reparative power, and when there was no tendency to repair, operation was almost hopeless. In most operations of this character the patient was operated on too late and died a few hours afterwards.

Dr. F. G. FINLEY thought the case presented a great number of features of interest. Such as, the early date at which perforation had occurred, the tenth day. This was the third case he had seen operated on, and the other two had died within a few hours from shock. This patient's condition had presented some difficulties, in that the temperature had kept up so long there seemed some doubt whether it was due to the fever or to sepsis, and, acting on the latter supposition, later on it was thought advisable to give him more food to keep up his strength. The autopsy showed, however, that the typhoid had persisted to the fiftieth day.

He considered that the chances of recovery were much greater in these early cases where the patient was not exhausted by three weeks or more of fever.

Dr. ARMSTRONG, in reply, said, in regard to the time at which the operation should be done, that he considered that the opening should be closed as soon as possible after the shock following the perforation had passed off. He also thought it would be good practice to give a hypodermic of morphia once a definite diagnosis of perforation had been made. This would arrest peristalsis, prevent diffusion of the septic matter from the bowel, and conserve the patient's strength.

With regard to an artificial anus, the difficulty would be to provide room for efficient drainage without making another opening.

Dr. Adami's idea of cutting off the typhoid area could not be carried out, as it was impossible to get away from the ulcer area. Perforations occurred over the whole length of the bowel, from the beginning of the ileum to the sigmoid flexure.

Undoubtedly the chances of recovery were better after convalescence was established, and the patient was able to take food to keep up his strength, instead of having both the fever and the operation to contend with at one and the same time.

On the Influence of the Age of the Test Culture upon Typhoid Serum Reactions.

Drs. WYATT JOHNSTON and D. D. MACTAGGART said that they had met with pseudo-reactions sufficiently decided to give rise to error in diagnosis in non-typhoid blood, when the cultures were too active. Pfeiffer states that typhoid serum can be diluted to a point where, though it would no longer give a reaction with virulent culture, it would still do so with an attenuated one. Drs. Johnston and MacTaggart find the reverse to be the case. In working with cultures highly virulent by transplanting them daily during a period of several weeks or months, they found that such cultures became peculiarly sensitive, so that even a few hours delay in transplanting produced, so to speak, a kind of premature decay. With such cultures a decided clumping was in three cases not typhoidal, obtainable when they were 24 to 30 hours old, while none occurred with the same culture from 12 to 20 hours old. The clumping in these cases was not that of the typical, complete reaction, but was sufficiently close to simulate a partial reaction.

When the bouillon culture was made from a stock culture kept at room temperature for a week or more, a few hours or days difference in the age appeared to have comparatively little effect on the result as far as the occurrence of pseudo reactions was concerned.[1]

In doubtful cases the best safeguard against being deceived by pseudo-reactions was that recommended by Widal, of very free dilution of the blood, to a point (1 to 30 or 1 to 50), where only genuine typhoid blood would react, as pseudo reactions were most liable to occur with relatively concentrated solutions. Drs. Johnston and MacTaggart stated that in 400 blood examinations so far they had not yet met with the typical, complete serum reactions under conditions which excluded genuine typhoid fever, and had only met with one severe case apparently of genuine typhoid when they could not readily obtain it during the height of the attack.

Dr. C. F. MARTIN stated that, in conjunction with Dr. H. B. YATES, he had examined the dried blood from all the patients in one of the medical wards of the Royal Victoria Hospital, the specimens having been collected by Dr. Argue, who had sent them on numbered slips of paper and retained the key to the diagnosis. They were thus enabled to make a fair test of the value of the method, and as a preliminary investigation they employed a five days' old typhoid culture, and had allowed the dried blood to remain untouched for ten days prior to employing the test.

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[1] With attenuated cultures grown at room temperatures and transplanted at intervals of about one month, these pseudo-reactions do not occur.

The cases were of the most varied nature, and among them were five of typhoid fever. When the complete examination of all the series had been made, the results were compared with the key of the house physician with the following result:—

In not one of the typhoid cases had there been a strong, positive reaction at the end of 4 hours. In two there had been a typical reaction within five minutes, which, in one instance, passed off after a few hours, and in the other, had become so modified as to be named merely a partial reaction, *i.e.*, although agglutination was present, there was considerable motion in many isolated bacilli. In the other three specimens from typhoid patients, there was no change in the hanging drop after five minutes, while in half an hour a partial reaction was manifest, either by agglutination, or by general cessation, which in 24 hours had not become sufficiently typical to yield a positive diagnosis When they obtained, within 24 hours, some definite agglutination with isolated motile bacilli elsewhere, they called this a weak reaction, and obtained it to a more or less marked degree in one case each of aortic disease, rheumatism, pernicious anæmia, and gastric neurosis, in two cases of venereal disease, and in a case of tuberculosis.

In the other cases the results were quite negative. In endeavoring to establish the relation between these remarkable results and their technique, Drs. Martin and Yates concluded that the fault lay either in the age of the culture used, the long exposure of the blood, or as Dr. Johnston had already suggested, the insufficient dilution of the serum employed. Their investigations being merely commenced they were not as yet prepared to definitely state the causes.

With reference to diabetes, they had examined two cases, and found in both instances a positive reaction within ten minutes, which, however, soon again disappeared, leaving after 24 hours absolutely no agglutination or cessation of motion.

Dr. JOHNSTON said, in reply, that a partial reaction did not, in his opinion, justify a positive diagnosis. Also, unless the blood was freely diluted, pseudo-reactions were liable to occur with virulent cultures. Sometimes in very early stages of genuine typhoid only a partial reaction might be obtainable.

THE

Montreal Medical Journal.

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BRITISH MEDICAL ASSOCIATION.

Judging from telegrams received from Dr. Roddick, his visit to London to confer with the leaders of the Association there has been most successful; he was received most cordially, and we understand that a dinner was given in his honour. A later telegram conveys news which we feel assured will be hailed with delight throughout Canada, namely that Lord Lister will be present at the Meeting. We learn also that the lists of Presidents of the various sections is nearly complete. It will be understood that while it is hoped to have leading members of the profession in the old country as presidents of the various sections, some little time is taken in making the list, even after the council of the Association has formulated the list of those to be asked to accept. Some of those first upon the list of selections may not be able to visit us. Happily there is an 'embarras de richesse' in the choice.

Negotiations are now in progress with the leading railway companies, to determine what shall be the reduction in fares offered to Canadian members of the Association, as distinct from the reductions offered for excursions during and after the Meeting: we hope shortly to be able to announce material reduction in the ordinary fares.

We are glad to announce that material reductions in rates have been offered by all companies to those travelling to Montreal via New York. The Canadian Pacific Railway offers to members and their families boarding their steamers at Hong Kong, Shanghai, Nagasaki, Kobe or Yokohama on production of proof of membership to their agents in these parts, tickets to Montreal, first cabin, for £36, or £63, return, tickets being good by the steamers leaving Hong Kong about June 9th and 30th, and July 1st, and having a time limit of six months from the date of issue to date of embarkation at Vancouver and return.

The Museum Committee has of late been busied sending out circulars to likely exhibitors and with them, a most admirable plan of the Victoria Skating Rink with the proposed arrangements of the tables and stands. If the programmes and other publications of the Association are in as excellent taste and form as is this plan devised by the Museum Committee, the Montreal meeting will stand out far ahead of all previous meetings in this particular.

COMPLIMENTARY DINNER IN LONDON TO THE PRESIDENT-ELECT OF THE BRITISH MEDICAL ASSOCIATION.

At the moment of going to press, we have received the *British Medical Journal* of January 23rd, and do not hesitate to abstract the following evidence of the good will manifested in the old country, not only towards Dr. Roddick, but towards Montreal and the prospective meeting of the British Medical Association in this city.

"On Wednesday evening, January 20th, Dr. Roddick, who earlier in the day had attended the meeting of the Council to discuss the arrangements as to the next annual meeting of the British Medical Association, which begins in Montreal on August 31st next, was entertained at dinner by some members of the Council at the Grand Hotel.

Among those present as guests were the President of the College of Physicians (Dr. Wilks), the Master of the Apothecaries' Society (Mr. E. Tegart), and Dr. Macnamara, Senior Vice-President of the College of Surgeons.

The chair was taken by Dr. Robert Saundby, President of the Council, who, at the end of the dinner, briefly proposed the toast of "The Queen," and spoke of her virtues, both as a queen and as a woman, which had endeared her to all subjects of the British Empire. The toast having been duly honoured,

Dr. Saundby again rose to propose the toast of "Our Guest," Professor Roddick. He said the object for which they had gathered together that night was, as they knew, to welcome Professor Roddick, their President-elect. Professor Roddick had made the long journey from Montreal, crossing the Atlantic, in order, by personal conference, to advance the arrangements for the coming meeting. They all felt extremely grateful to him for his kindness, and acknowledged deeply the sacrifice he must have made in leaving his professional work at this time of year. They were all heartily glad to see him among them, to make his acquaintance and give him a real and hearty British welcome in his capacity as President-elect. He (the President of Council) hoped they were all looking forward to going to Canada and enjoying the hospitality which each Canadian friend promised them at Carlisle in such hearty terms. He was certain that everyone who did go to Canada would be well received and most heartily repaid for his visit. He was trespassing on Professor Roddick's speech in saying so much, but their business was to express their welcome to Professor Roddick for having come over here. The Arrangement Committee was always composed of six members, appointed locally by the town in which the meeting was to be held, and six members appointed by the Council. There was no difficulty in settling points which arose, because the representatives of the Council, so long as certain formalities were complied with, were only anxious to do all they could to meet the views of the local representatives. On this occasion the six Canadian representatives were sitting in Canada and the six London representatives sitting in London, and it became a little difficult, even with the cable across the Atlantic, to adjust the many matters of detail which arose for decision. Professor Roddick had undertaken the journey to set those matters straight. The result had been extremely satisfactory.

The toast, which was warmly received, having been duly honoured,

Dr. RODDICK, who was received with loud applause, in responding said he had to thank the President of Council for the very kind and very flattering manner in which he had proposed his health, and the gentlemen present for the very friendly and enthusiastic manner in which they had received that toast. He assured them that when he arrived here he was somewhat surprised, and he might say flattered, to learn through the President of Council by a letter to him that a dinner would be tendered to him that evening after the meeting of the Council. He was more than surprised—he was almost frightened into shock—when he discovered that not only were they going to dine him, but they expected him to make a speech. He assured them that without exception this was probably one of the proudest days of his life. He felt that if he had been at some inconvenience in crossing the Atlantic he had been fully repaid by the way in which he had been treated that day, and by the magnanimous manner in which they were treating him that night. He assured them that the dinner was most unexpected, and while he could not conceal the fact that he had felt very much and very keenly the great honour they had done him in nominating him as President-Elect of this great British Medical Association, at the same time he certainly did not expect this to be backed up by such treatment as he had received since he arrived in

London a week or ten days ago. The idea of having the British Medical Association in Canada originated some years ago. He had himself prompted his friend Dr. Osler on one occasion to suggest at the dinner of the British Medical Association in Bristol that they might ask the Association to visit Montreal. Sir William Hingston also spoke at Nottingham on the subject, and ever since a Branch of the British Medical Association had been formed in Montreal he had never ceased himself to agitate this question. He felt it was a great contract to bring the Association to Montreal, but he was an Imperialist, and if there was anything by means of which he could bring more closely the premier Colony of Canada to the British Isles, he would be always willing to do it. There is no doubt about it that we have sometimes not been looked after quite so well by our friends on this side of the Atlantic as we should have been ; we have felt ourselves neglected, and we have constantly had occasion to feel that those over here did not know us as well as they ought, and he wished they did. He hoped it would be many a-day before Canadians added more stars and stripes to the United States. and hoped that they would be satisfied for a long time with that flag that was wrapped around Wolfe on the Plains of Abraham, and which 50 years later led DeSalabery and Brock on to victory. He thought they were getting in the thin edge of the wedge of genuine Imperialism in bringing over in the same year to Canada two great associations like the British Medical Association and the British Association. Undoubtedly the visit to Montreal would be a success if they would give them the opportunity of making it a success. They wanted the members of the Association, and that was all—they would attend to the rest. They would see that the members of the Association were well looked after, and had nothing to complain of. He hoped they would be able to come back and say that one of the most successful meetings of the British Medical Association was held in the city of Montreal. Not only that but they in Canada felt that there was going to be an intellectual treat for the Canadians ; and, as he said to-day at the Council meeting, they were very anxious to do this. They were anxious to have 600, 800 or 1,000 Canadian practitioners meet the men who were going over from this side. He certainly thought they ought to guarantee to Montreal 500 or 600 at any rate. Not only would it be an intellectual treat, but he thought they could give the members a social treat and a treat in travel which those of the meeting who had never crossed the Atlantic before would have an opportunity of experiencing. They would show them one of the largest rivers in the world, which was only 200 miles across in one place, and the old city of

Quebec, which dated back very far, to the days of Jacques Cartier and Champlain. Then they could show the members one of the prettiest cities in the world—the city of Montreal. Further than that, they proposed to take them to see the greatest cataract in the world—Niagara Falls. Beyond that, they would journey, he hoped, as many as could be persuaded to go, to the great wheat fields of Manitoba and the North West, which would give them an opportunity of seeing where the millions of bushels of wheat came from, which, if the crop failed in India and all the other cereal-growing countries in the world, they could provide them with. They would be taken to the great Rocky Range of mountains, the scenery of which could not be excelled in the world. Again, if they were inclined to invest, and wanted to know something about where their money was going, they could take the members to the Kootenay Valley, the great mining country of Rossland. They would also have an opportunity of seeing the great Pacific Ocean. He thought altogether they could certainly offer the members of the Association a thorough treat, and hoped that every member of the Council—especially everyone that heard him that night—would guarantee, at any rate, ten others who would come across the Atlantic. He assured them that, so far as the profession in Canada was concerned, they were unanimous on that point. There was no jealousy; no one begrudged anybody anything. For himself he felt that he had the entire profession in Canada at his back. They had a free hand, and they wanted the members to feel that they must come, and let everything else go. He could positively assure them that they should certainly have a trip which could not be bettered anywhere in the world. In conclusion, he thanked them very heartily, and said he could not allow that opportunity to pass without again saying how flattered and grateful he was for the great kindness they had shown him.

Dr. RODDICK, on again rising, and in proposing the toast of "The British Medical Association," said he assured them that it afforded him very great pleasure indeed to present to them that toast. He quite appreciated now for the first time what the British Medical Association was. One had to come and spend a day or two and attend the different meetings and the meeting of Council to know how much work was before them. He had no conception of the amount of work which was undertaken and accomplished by the British Medical Association. He had to congratulate them on one thing, and that was the officials of the Association. He thought they had been exceedingly lucky in the choice they had made in their President of Council, Dr. Saundby, and in the choice he understood they had made many years ago (and he hoped it would be a long time before they found it necessary to shelve him) in their worthy Secretary, Mr. Fowke. Together their organization was grand. He had been sitting in the Parliament of Canada, where they had 240 members, and had been at different Committee meetings there, but he certainly never saw a better conducted and more orderly meeting than that which he attended that afternoon in their Council Room. Although there was a difference of opinion, as there always is—and there must be to give spice to the pudding—the Chairman of the Council managed to make everyone believe that he was everybody's friend. He felt about the Chairman, that some day they would see him sitting in the House of Commons. He certainly had the legislator's head, the political instinct, and besides that there was the statesman in him. He (Dr. Roddick) said their Association, numbering 20,000 members, was certainly the largest medical association of the kind in the world, and that was a great deal to say. He felt that if the Association was not the most influential, it was among the most influential, and he doubted if as a scientific body there was its equal anywhere in the world. From such a small beginning a comparatively few years ago, it was astonishing how the Association had grown to enormous proportions. He felt that the Branches of the Association should be encouraged, and thought they certainly would constitute one of the links of that great Imperialism to which he previously referred. He hoped they would allow the Colonial Branches to grow and prosper, and that some day they would be tempted to accept an invitation from Australia. In proposing that toast they must allow him to say a word about his friend on the right (Dr. Henry Barnes), the President of the Association. Although he met him for the first time yesterday, he had begun to love him, and felt, in the choice which the men of the Border Counties made in selecting him as their President, they had made an admirable choice. He could understand now how the Carlisle meeting had been such a success. With Dr. Barnes as President it could not be otherwise. He asked them to drink to "The British Medical Association," and would connect with that toast the health of the President of the Association.

The toast having been drunk,

Dr. Henry Barnes (Carlisle), the President of the Association, in responding, said that to have succeeded to the Chair of the British Medical Association—after the very brilliant and successful meeting in London, presided over by the late Sir Russell Reynolds, a man of world-wide reputation, a man who was beloved throughout the whole of the medical profession—was a distinction which was sufficient for any man; and to preside over the Association and to be followed by the first Colonial President of the Association was an honour which he did not esteem less highly. He thought it was a happy inspiration on the part of the President of Council to invite them there to a dinner of welcome to the President-elect, the first Colonial President of the British Medical Association. The Association was thoroughly justifying its designation of "British" by accepting the invitation of the premier colony of the British Dominions. After the brilliantly successful meeting in London came to a conclusion it was felt that there were very few places that would care to put themselves in competition with London, but he had himself felt that some of the most useful meetings of the Association had been held in the less populous centres, and the success of the meeting in Carlisle had once more demonstrated the truth of this view. One of the principal objects of the Association was to promote cordiality and good feeling amongst its members, and he was proud and glad to say that the members of the profession in Cumberland, after the visit of the Association, were better friends than ever before. Carlisle also had proved that it was possible to hold meetings in less wealthy places. The guarantee fund which had been raised had paid all expenses, and had permitted a substantial return to be made to the subscribers. When he first joined the Association it had only 2,000 members. When he became President the circulation of the *Journal* was 19,000. He thought the increase in the circulation of the *Journal* was the best augury for the success of the Association. He understood from Professor Roddick that the number of Colonial Branches was increasing in Canada, and he believed that wherever the English language was spoken, wherever medical men were practising, there the *British Medical Journal* circulated.

The Treasurer (Dr. Parsons), next proposed "The Medical Corporations," and he hoped Professor Roddick would understand, from the presence of the President of the Royal College of Physicians, the Senior Vice-President of the Royal College of Surgeons (Mr. Macnamara), and the Master of the Apothecaries' Company, that it was the desire of the whole medical profession, as well as the British Medical Association, to accord him a very hearty and sincere welcome. The medical profession was very much indebted to these corporations in a variety of ways. The Apothecaries' Company was entitled to their gratitude, because it was the first to recognize the fact that the education of the medical practitioner should be the liberal education of gentlemen. It was the first to recognize that an examination and acquaintance with arts was a necessary preliminary to the study of physic. He asked them to drink to the medical corporations, and to couple with the toast the name of Dr. Wilks, the President of the Royal College of Physicians. Long might he enjoy that dignity!

The toast having been duly honoured,

Dr. Wilks, in replying, said he thanked them for responding to the kind words of the Treasurer. He was very pleased with the remarks that had been made by the Treasurer as to the sympathy which ought to exist, and he hoped did exist, between the Board and the Corporations. Dr. Wilks then proceeded to refer at some length to the difficult work of the Royal College of Physicians. He said the profession at large appeared hardly to be aware of the extent of this work, of the care which was given to cases of complaint brought to the knowledge of the College, or of the number of cases which thus came under consideration during the course of the year. The British Medical Association could do very much by voluntary co-operation and union to bring pressure to bear and to set a high standard of professional conduct, but the powers of the Association were practically limited to this. But the Colleges possessed further powers. What he wished the profession to understand was that the Royal College of Physicians was prepared to exercise its powers in these matters, and that it did exercise them, as he believed, to the very great benefit of the profession, which might rest assured that every complaint duly authenticated would receive most cordial attention at the hand of the Censors Board, and would be made the subject of minute and painstaking inquiry.

Mr. Wheelhouse then, in a few graceful words, proposed "The Health of Dr. Saundby," thanking him for giving them the opportunity of meeting the President-elect. This was suitably acknowledged by Dr. Saundby, who then proposed the health of Dr. Dundas Grant and Dr. Charles Grant and Mr. Harden, who had contributed several excellent songs to the pleasure of the evening.

MEDICAL LIBRARY, McGILL UNIVERSITY.

DONATIONS TO THE LIBRARY FOR QUARTER ENDING NOV. 30TH, 1896.

From the libraries of the Surgeon-General's office, United States Army: Boston Medical Library; Royal College of Surgeons, Lond.; College of Physicians, Phil.; New York Academy of Medicine; Library Public Documents, Wash. Also the following Transactions and Journals: Tr. of the Medical and Chirurgical Faculty of the State of Maryland; Tr. of the Clinical Society of London; Tr. of American Electro Therapeutic Association; Tr. of the Association of American

Physicians, Tr. of the American Climatological Assn.; Tr. of the New York State Medical Assn.; Virginia Medical Times; Post Graduate-New York.

The library is indebted to the following authors for copies of their works:

J. C. Webster, B.A., M.D., F.R.C.P., Ed.—Selected Papers; Ectopic Pregnancy; Practical and Operative Gynaecology.

G. E. De Schweinitz, A.M., M.D.—The Toxic Amblyopias.

J. H. Musser, M.D.—Practical Treatise on Medical Diagnosis.

H. M. Whelpley, M.D., Ph. G., F.R.M.S.—Therapeutic Terms for Pharmacists and Physicians; Chemical Lecture Notes.

Otto A. Wall, M.D., Ph. G.—The Prescription; Therapeutically; Pharmaceutically; Grammatically and Historically considered.

W. J. C. Miller, B.A.—Medical Register, 1896; Dentist's Register, 1896. London.

Carey Coombs, M.D., Lond.—Galvanism in the Treatment of Neuritis and other diseases.

Dr. Klein—Lond. Micro-organisms and Disease.

R. Fletcher, M.D.—The Witches Pharmacopoeia. Medical Lore, Ph.

F. M. R. Spendlove, M.D.—The Nature of Disease. Ph.

It has also received the following, for which it is much indebted to the contributors:

Professor Shepherd—Case books of R. L. MacDonnell, M.D., and Richard MacDonnell, M.D., unbound journals and pamphlets.

Professor Adami—Medical Chronicle, Vols. XI, XIII, XV, XVI, XVII, XIX, and N. S., Vol. III.

Professor Cameron—Lehrbuch der Geburtshülfe, by M. Runge, M.D.; Thérapeutique Obstétricale, by A. Auvard, M.D.; Pathology of Childbed, by F. Winckel, M.D.; Practical Treatise on Urinary and Renal diseases, by W. Roberts, M.D.; tr. from 2nd German Ed., by J. R. Chadwick, M.D.; Medical Diagnosis, by J. M. Da Costa, M.D.; Diseases of Women, Vol. I, by L. Tait, M.D.; Manual of Obstetrics by Dr. Dorland; Manual of Pathological Histology, Vol. I and II, by Cornil and Ranvier, translated by A. M. Hart, M.D.; British Gynaecological Journal, Vol. X and XI.

Professor Blackader—Materia Medica and Pharmacology, by D. M. R. Culbreth, M.D.

Professor Mills, Pamphlets.

Professor Finley—Handbuch der Speciellen Pathologie and Therap. by R. Virchow, J. Vogel and Stiebel, Bds. I to VII. Pamphlets.

Dr. Kirkpatrick (Montreal Medical Journal) American Academy of Railway Surgeons two Vols.; unbound Journals and Pamphlets.

Dr. G. M. Gould, Journals.

Dr. C. Wilson—Corporis Humani, by C. Bartholini, (1611).

Dr. W. S. Morrow—Experimental Physiology, by B. Martin, Lond., 1755.

Dr. L. Lamarche—Union Medicale.

NEW BOOKS AND JOURNALS RECEIVED FOR THE QUARTER.—Annual of the Universal Medical Sciences, Journal de Anatomie, Archiv. fur Physiologie, Practitioner Lond., Archives of Surgery, Dublin J. of Med. Sci., Revue des Sciences Medicales, Schmidt's Jahrbücher, British Medical J., Journal of Physiology, Arch. fur die Gesammten Physiologie, American Journal of Med. Sci., Jahresbericht Gesammten Medicine, Chemisches Central Blatt, Annals of Surgery, Journal de l'Anatomie, Journal of Anatomy and Physiology, British Gynaecological Journal, New York Medical Journal, Archiv. fur Klinische Chirurgie, Archiv. fur Path. Anat. und Phy., and fur Kl. Med., Disease of the Skin, Morris; Index Medicus, Edinburgh Med. J., Medical Jurisprudence, Witthaus & Becker, System of Medicine, Allbutt, Vol. I., Grey's Anat., Boston Medical Journal.

THE SOCIETY OF MEDICAL PHONOGRAPHERS.—In Great Britain the Society of Medical Phonographers has been founded to promote the use of phonetic short-hand in medical work. This society has made steady progress, and it now numbers two hundred and fifty names on its membership roll. This society issues the *Record*, a monthly medical periodical in lithographed short-hand, and has recently published two small pamphlets dealing with the use of short-hand by the student and by the practitioner respectively. More recently a list of twenty-five hundred phonographic outlines of medical terms has been issued. The value of short-hand as a means of securing not only adequate records of facts, but of intercommunication, has led to the establishment of various circulating manuscript magazines, each of which presents the advantages of a small medical society even to those who are in remote parts of the kingdom, while at the same time affording practice in reading. The annual subscription to the society, which is five shillings, or in the case of students before qualification three shillings, entitles the subscriber to receive post-free all the phonographic literature issued by the society for the year. The society has petitioned the General Medical Council to make short-hand an optional mark-bearing subject at the preliminary examination. The educational committee of the Council has had this petition under consideration and will report on it at the next meeting. Dr. Gowers has been chiefly instrumental in securing the organization of the society.

The New York Board of Health has under consideration the banishing of dogs from the streets.

The Philadelphia *Polyclinic* says that while in this country only one per cent. of epileptics recover, in Germany, under the village system, five or six recover, and more than half of those admitted are greatly improved.

A suit for $20,000, brought by a Mrs. Yinsley for alleged dissection of her husband's body at the Central Medical College of St. Joseph, Mo., has been won by the college. This is the second trial and it is to be hoped the last.

The death of Rokitansky, the Viennese opera singer, at the age of sixty, and son of the celebrated Austrian pathologist, who also had a son a physician, recalls the answer given by Rokitansky, Sr., when asked what his sons did. He said: "*Der eine heilt und der andere heult*," *i.e.*, "One heals and the other howls."

A modification of the Hagedorn needle has been devised by Dr. J. A. Dibrell, Jr., of Little Rock. The point and the eye ends are of the

Hagedorn shape, but the middle part of the needle is flattened in the other direction so that it can be grasped by an ordinary needle holder and does not require a Hagedorn holder.

A dumb thermometer is on the market. The temperature is not indicated by a scale upon the instrument, but instead a close-fitting case bears the markings and the physician is enabled to read the temperature when the thermometer is encased. This invention is calculated to obviate the depressing effects incident to patients catching a glimpse of their fever record.

NEW BOOKS, ETC., RECEIVED AND NOTED.

Transactions of the American Surgical Association. Vol. XIV, 1896.

Report of three cases of Phthisis pulmonalis following scald of the chest. By J. N. Hall, M.D, Re-printed from the Medical Record Aug. 15th, 1896.

The value of the pulmonic second sound. By J. N. Hall, M.D Re print from the Journal of the American Medical Association, June 27th, 1896.

A study of Cicatrices with reference to right and left-handedness and ambidexterity. By J. N. Hall, M.D. Reprint from the Boston Medical and Surgical Journal. Dec. 17th, 1896.

Sub-Conjunctival Injections. By Clarence A. Veasey, A.M., M.D. Reprint from American Journal of Ophthalmology. Sept. 1896.

Autoscopy of the Larynx and Trachea, By Alfred Kirstein, M.D. Translated by Max Thornet, A.M., M.D. Philadelphia; The F. A. Davis Co.

Artificial Anaesthesia. By Lawrence Turnbull, M.D., Ph. G. Philadelphia; P. Blaskiston, Son & Co.

The Principles of Theoretical Chemistry. By Ira Remsen. Philadelphia and New York; Lea Brothers & Co.

Bulletin 51. Report on Crops, Live Stock, &c., in Manitoba. Dec. 4, 1896.

La Role de la Graisse dans les Hernies. By Just Lucas-Championnière. Reprint from Journal de Médecine et de Chirurgie pratiques. Sept. 10th, 1896.

Vingt Cas de Fractures de Clavicule traites par le Massage. Dr. Dragon. Reprint du Journal de Médecine et de Chirurgie pratiques. August, 25th, 1896.

Transactions of the Medical and Chirurgical Faculty of the State of Maryland. 98th Annual Session.

Transactions of the Medical Society of the State of North Carolina. 43rd Annual Meeting.

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Original Communications.

DISCUSSION ON DYSMENORRHŒA.[1]

SYMPTOMATOLOGY AND DIAGNOSIS.

BY
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The Function of Menstruation is surely one of the most remarkable in the animal economy. It is the only instance of a physiological shedding of blood. It is confined to the human female and certain monkeys. The discharge comes from the mucous membrane of the uterus and probably also from the fallopian tubes; the body of the uterus alone is concerned with the process, the cervix taking no part therein. Into the question of the relation of ovulation to menstruation it would, I think, be obviously improper to enter in this discussion. The theory that such a relation exists is deemed by many to be untenable, but the clinical evidence that this periodical discharge is in some way related to the maturation of ova is to my mind incontrovertible. We have then to deal with a physiological function. Are physiological functions in health always painless? The answer must be no, and yet perhaps the only functions that are painful are those of the uterus, as for instance the best example of all—parturition. The fact that we are to discuss to-night dysmenorrhœa, or painful difficult menstruation, implies that it is often painful, difficult, disturbing. That it is painful —sometimes an exceedingly painful process—in the entire absence of any other evidence or symptom of disease, subjective or objective is a matter of very frequent observation to us all. That this function is in some women an entirely painless one must be admitted by all. That however it is attended in the vast majority by certain discomforts is evidenced by the ordinary way of speaking of it, "unwell," or as the

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French say "indispose." It is a matter of common observation that social condition and circumstances influence much the extent or amount of complaint. Women of the lower classes, obliged to work with their hands, as a class suffer relatively very little as compared with women delicately nurtured in luxury and refinement. As compared with ordinary slight discomfort and the intense form of dysmenorrhœa, attended with agitation, restlessness and loud outcry of pain, we have every degree of severity of disturbance. In all cases the relative susceptibility to influences causing pain, and the capacity for endurance of pain must be taken into account. It is much a question of the personal equation. The condition of the nervous system induced by a life of luxury and refinement and the defective training so often associated, is commonly one of greatly increased sensibility. If such influences have operated through several generations their effect is much intensified. But it is not only by their influence in rendering the woman more sensitive, that these conditions do thus operate. The modern methods of education with their system of emulation and strife for place and position, for rewards of excellence and attainments, of diplomas and the like, operating as they do at an age when a large measure of the nutritive force of the body is required for the development of the sexual organs, operate in withdrawing to other channels such energy and force. The result is a stunting or imperfect development of the generative organs. It is a law of animal life that an imperfectly developed organ performs its function with difficulty and imperfectly. Then there is local pain and general disturbance. It follows that in estimating the significance of menstrual pain many things must be taken into account. How then are we to estimate an amount of pain which we must designate painful menstruation. Roughly perhaps we may conclude that an amount of pain which interferes with the woman of the lower classes attending to her daily avocations, and which in the woman of the upper classes prevents the observance of social engagements and the taking part in the usual round of pleasures, may justly be considered as dysmenorrhœa. At every step in dealing with painful menstruation the great fact must ever been borne in mind that it is a symptom, and that it is a symptom of many and varied conditions, just as are the other menstrual disorders, amenorrhœa and menorrhagia. The physician who can accurately diagnose and skilfully treat the disorders of menstruation is an accomplished practitioner of the diseases of women. Some classification of dysmenorrhœa is therefore absolutely necessary to a proper study of the subject. But here, as in all other classifications of disease or symptoms, types must be considered. No harm can result from such a mental attitude if we remember that types are often departed from and that we often have a blending of the phenomena of more than one type in a given case, because we have an association of the general and anatomical conditions of more than one form. A considerable experience as teacher and practitioner leads me to the conclusion that there is no better classification than an old one which I now give:

1. Neuralgic Dysmenorrhœa.
2. Congestive or Inflammatory.
3. Obstructive.
4. Membranous.
5. Ovarian.

The Neuralgic Form is met with very frequently, especially in young subjects, but it not rarely persists to middle age, especially in the unmarried. In such cases, a few years after a sterile marriage, the pain diminishes and the case then is apt to present the features of a complex condition, from the development of congestive and nutritive changes in the uterus and its appendages. In the event of pregnancy to full term, in the vast majority of cases the patient is cured, or, at all events, greatly relieved. In the typical case of this kind, not very rare, there is absolutely no discernible anatomical abnormality of the parts concerned. In many, however, we have some evidence of defective development of uterus and ovaries, especially of the uterus. The organ is smaller, measures in depth less than the normal two and a half inches, the cavity is smaller than normal, the walls thinner, the whole organ flabbier, and very commonly it presents one or other of those deformities we call anteflexion, or the rarer retroflexion. The relation of anteflexion to painful menstruation has been a subject of much discussion. By many the condition has been claimed to be a cause of obstruction, apparently suggested by the condition of a piece of rubber tubing when bent till kinking of the tube takes place. By others, obstruction in the anteflexed womb is strongly denied. Probably in this, as in most questions much disputed, the truth lies midway, and at all events in some the supervention of the hyperæmia and development of the mucosa may account for narrowing of the channel of the cervix at the time of menstruation. Anteflexion in the class of patients under consideration, the young, is a persistence, in a measure, of infantile conditions, it is imperfect development, and, as has already been remarked, an ill-grown organ does its work badly, with difficulty and pain. In those cases in which anatomically everything is right, we conclude that it is the nervous system or the general nutrition that is at fault, and this view is confirmed by the temperament, the symptoms, the history of the patient, especially with reference to heredity, and the results of treatment. This form of painful menstruation may be acquired after months or years of normal function, and it often varies in intensity with the condition of general health and the operation of certain causes by which the nervous system may suffer. In short, the typical case is a local expression of a morbid nervous system as certainly as is so often a neuralgia of a branch of the fifth pair of nerves. In a typical case the symptoms are well marked. The picture is clearly drawn. The pain comes on with the advent of the flow, or an hour or two only before it, and lasts for from twelve to thirty-six hours; it is commonly intense, with outcry and great agitation, and not rarely attended with vomiting, and, in the severer cases, with great general nervous disturbance, hysterical manifestations and sometimes temporary insanity. After the lapse of the time mentioned, the flow continues, but the pain is gone or greatly reduced and there are the evidences of exhaustion, the result of the ordeal through which the patient has passed, and from which it may take many days to recover. The flow may be scanty or moderate, the severer types usually having a scanty discharge. Throughout the interval the sufferer is absolutely free from pelvic pain or other symptom, and remains well until quite the time of the next period. In many, however, the monthly ordeal thus endured, in time affects general health in an important way, and in not a few ultimately, without any apparent operation of other causes, we observe the gradual development of the evidences of a greater or less degree of persistent disturbance of the circulation of the womb and its appendages.

On such a grouping of symptoms, we must, in the young and unmarried, for a time at least, base our diagnosis. I feel that I cannot too strongly deprecate the physical examination of the patient under such circumstances until suitable constitutional remedies have been faithfully tried, and this conviction is borne of repeated successes. I am, however, equally clear in my mind that there must be a limit to the delay in advising examination. In this I am borne out by the opinion of that philosopher and keen observer, the late Dr. Matthews Duncan, a most strenuous opponent of the mechanical theory of dysmenorrhœa, who yet was obliged to admit that sometimes the most successful treatment is a local and mechanical one.

The Congestive and Inflammatory Form—Of all the cases of painful menstruation we meet with in practice the larger number belong to this class, but it does not contain the majority of the most severe cases. We are now concerned with a class of cases in which the pain is a symptom of an acute or chronic congestive or inflammatory condition of the organs concerned in menstruation and of the pelvic peritoneum and cellular tissue, however brought about, and it persists with varying intensity throughout the period. The causes are, therefore, all the causes of these inflammatory conditions. The simplest is the case of a chill during menstruation, which appears to be the starting point of many cases. The various infective processes account for a very large proportion, I need only mention gonorrhœa, the various infective processes which commence their operations with abortion and full time labour and at surgical operations or simple examinations of the organs; and, finally, tuberculosis. The neoplastic growths, cancer and sarcoma, but specially the much more common myoma or fibro-myoma, are also frequently attended with painful menstruation. In all cases of this class the pain precedes the flow by two or three days to a week, and in varying intensity pelvic symptoms exist throughout the interval. It may require careful cross-questioning to elicit such evidences. Given such a relation of symptoms to the menstrual flow, whatever the age or social condition, single or married, careful physical examination of the pelvic organs is an absolute necessity to furnish a basis for diagnosis and successful treatment. While every conscientious practitioner must deprecate such examination in the neuralgic cases of the unmarried, for a time at least, until suitable medicinal and regiminal treatment has been tried and found wanting, here it is an imperative duty.

The Obstructive Form—This title implies some obstruction to the escape of the discharge which may be healthily secreted in normal quantity. It may be in any part of the genital tract and may be the result of imperfect or abnormal development, or may be acquired as a result of morbid processes or surgical operation. In this class of cases the pain precedes the flow for a few hours, is paroxysmal, and when it reaches an acme of intensity, perhaps attended with vomiting (so often an attendant on distension of uterine fibre), it is suddenly relieved by a gush of blood, fluid and clotted. Such a set of symptoms is usually repeated several times during each period. During the first months or years of such a menstrual history, symptoms are entirely absent in the intervals. In all, however, sooner or later we have developed the evidences of congestive or inflammatory processes of the uterus and appendages. An important though rare form of defective development of the uterus must be here mentioned. It is the uterus septus, with occlusion of one chamber, the other being patent. From the latter menstruation occurs regularly, while in the other there is a gradually increasing accumulation of the secretion, leading to the formation of a pelvic tumour, with symptoms more or less well marked. I have met with one such case. It has served to impress me with the existence of a condition which may for a time at least be easily overlooked and remain undiagnosed.

Membranous Dysmenorrhœa.—Relatively an exceedingly rare and well marked form. The distinctive feature is the expulsion at each period of a cast of the uterine cavity, complete, of triangular form, with an aperture at each angle, or in pieces. The cast is the mucosa of the uterus, proved beyond a doubt by its microscopical characters. I have already alluded to its great rarity. A special experience of many years may comprise at the most half a dozen cases. I have met with only three well defined examples. It is well that this is so, for it is marked by intense suffering and is most obstinate to treatment of all kinds. There is pain from the first, or even before the flow appears, but it reaches its acme of intensity on the second day, when the membrane is expelled by uterine contractions. The flow is profuse, and it continues for some days after the expulsion of the membrane. After the cessation of the bloody discharge, leucorrhœa continues for a few more days. The pathological condition is doubtless a peculiar form of endometritis. At all events there is a proliferation of the endometrium, and the uterus as a whole is not in a condition of perfect health, and yet the condition of the organ, as ascertained by all our known methods of diagnosis, is in no wise different from that of the numberless cases of chronic metritis, in which we have no such symptom. In my experience all the patients have been sterile. In the majority, they have borne children at some remote period. In a single well marked case the patient was unmarried and nulliparous.

In the classification I have adopted an *ovarian form* is included. In recent years some authorities have denied the existence of painful menstruation of ovarian origin other than that which is so often observed in more or less general inflammation of the uterus and its appendages, with adhesions from pelvic peritonitis, now recognized to be always of various infective origin. I believe, however, that there is a small class of cases in which the uterus and tubes are healthy, but the ovaries are diseased. In the early stages they are enlarged and tender, prolapsed because of their increased weight, but not adherent. If adherent, I conclude that the case should be transferred to the congestive or inflammatory class. Such enlargement of the ovaries may be due to a cystic condition, a degenerative process in which possibly inflammation plays a part. In the latter stages the ovaries may be reduced in size, shrunken and hard (cirrhotic). In this form the pain precedes the flow by a day or two, and continues during the first days after its appearance. The prognosis is bad. The patients are usually sterile. The inaccesibility of these organs to local treatment is obvious. In the, unfortunately, rare occurrence of pregnancy lies almost the only hope of cure, by reason of the prolonged rest from the performance of function of the organs concerned.

In the foregoing pages the causation of pain in menstruation has been more or less incidentally discussed. A somewhat more particular consideration of the question seems desirable. A reiteration of the fact, a matter of daily observation in the study of disease, that all pain is relative to individual susceptibility appears to be in place. Pain is the irritation of nerve ends. Menstrual pain is the irritation of nerve ends in the uterus and its appendages. What is the cause of the irritation ? It must I think be regarded as primarily the hyperæmia or congestion which precedes and attends upon the proliferative processes in the organs concerned. In perfect health of the nervous system and of the uterus and ovaries, menstruation is painless. It is so in certain cases of marked disease of these organs, even when that disease is a fatal one, as cancer. It is to my mind largely a question of relative sensibility of the nervous system. In the purely neuralgic form it is entirely a condition of abnormal sensibility of the nervous system. The abnormally sensitive nerve terminals and centres cry out under the compression produced by the hyperæmia. In the woman with a healthy nervous system but with acute or chronic congestion or inflammatory disease of the organs, such disease accounts for abnormal compression and irritation. But anatomical facts and therapeutic experiments indicate that obstruction to the escape of the discharge is an important factor in the irritation of uterine nerve terminals. A marked narrowing of any part of the genital tract will constitute an obstructive condition at all times, but there are many cases in which an examination in the interval will reveal no such obstruction, yet, the hyperæmia and hyperplasia of the menstrual period will result in partial obstruction with more or less distension of uterine fibre. Abnormal shedding of uterine mucosa, best marked in the exceedingly rare membranous form, by temporary plugging of the cervix will also lead to temporary obstruction. Abnormal amount of discharge with clotting may be partially obstructive. We have then uterine contraction set up, constituting another cause of pain, which will be paroxysmal. Under these circumstances the condition of chronic inflammation of the contractile hollow muscle—the womb, and its appendages, the contractions are unduly painful.

Diagnosis:—Painful menstruation being a symptom of many and varied conditions, general and local, accurate diagnosis is therefore essential if treatment is to be successful. Certainly the nature of the cause in any case can only be ascertained by accurate physical examination of the organs concerned in the function. In the neuralgic or neurotic form there is however we have learnt, no anatomical abnormality. The results of examination are therefore negative. But the symptoms are characteristic. Many of the patients are virgins and examination should be deferred as long as possible, at all events until judicious regiminal and medicinal treatment has failed. Such treatment will however in a large majority of cases be successful. The evidence on which the diagnosis is to be based is derived from the neurotic ancestry, evidences of neurotic taint in the patient herself, the relation of the pain to the flow as regards time, it appears only an hour or two before or with the advent of the discharge; it rarely lasts more than a day. In the intervals, the patient is entirely free from pelvic pain, leucorrhœa, and reflex symptoms. It is rare however that true neuralgic dysmenorrhœa lasts many years without the development of chronic vascular and nutritive changes in the uterus and its appendages and then we have the inter-menstrual symptoms more or less gradually making their appearance. It must be remembered that the neuralgic uterus is predisposed to nutritive changes. For the diagnosis of the conditions present in the other forms all our available methods of physical diagnosis of pelvic conditions may be necessary. First and always most fruitful of results and safest is the digital and bimanual examination by skilled hands in the vagina and rectum. We shall thus discover ill-developed uterus and ovaries, abnormalities of the vagina, chronic metritis. inflammatory affections of the uterine appendages, or tumours of the uterus and its appendages. The more dangerous sound and curette may be necessary to discover the depth and size of the uterine cavity and the condition of the mucosa. All such examinations by finger and instruments will be much more fruitful and certain of result if conducted under an anæsthetic. In truth in many, only by the use of anæsthetics can the examination be satisfactory. In the great majority of virgin patients anæsthesis should always be employed, and after each of the methods already mentioned have been employed we may still be at sea until we have dilated the cervix to gain access to the uterine cavity with the finger. For instance a small submucous myoma or polypus may often in this way be alone discovered as the sole cause of the symptoms. In fine I must mention a somewhat doubtful and certainly dangerous method of examination by the intra-uterine employment of the galvanic current after the method of Apostoli. This depends on the reaction of diseased uterine appendages to the current whereby they are unduly irritated. Finally Mr. President it will have been perceived that my remarks are far from being exhaustive of that part of the subject alloted to me. I have not intended that they should be so, but rather suggestive and by way of outline to be filled in I trust by the speakers who are to follow.

DISCUSSION ON DYSMENORRHŒA.[1]

THE TREATMENT

BY

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Treatment of Dysmenorrhœa.—The treatment of dysmenorrhœa is such a wide subject that one can only rapidly run over some of the different forms without fully advancing arguments for or against any one particular kind in the time at our disposal.

In considering this question, we must keep before us the fact that dysmenorrhœa is merely a painful manifestation of some abnormal condition of either the body generally or one or more of the pelvic organs, and that, in order to cure the symptom we must cure the cause. Thus our first steps should be directed towards discovering that cause. The physician who blindly treats dysmenorrhœa by a routine course of sedatives, without thorough investigation of the case, is doing justice to neither his patient nor himself. The routine use of this class of drugs is to be most strongly deprecated as they in time do positive harm in making patients their slaves and undermining their nervous system. Of course if one is called in to see a patient who is in the midst of a most acute attack of pain, an hypodermic of morphine is often absolutely necessary, although much may be gained by the application of heat to the hypogastrium and a dose of 10 grs. of antipyrine or phenacetine repeated twice if necessary with an interval of one hour. Alcohol acts like magic in relieving the majority of cases and it is largely used (far more largely than one would at first think) by women, but it should be utterly prohibited as the habit is very apt to grow on one and it really increases any local trouble which may already exist.

A great deal may be done to prevent the occurrence of dysmenorrhœa by care of the growing girl. I think that it is the experience of the older physicians, that dysmenorrhœa is growing more and more common, and this is to a great part due to the carelessness and ignorance of parents who do not know the extent of the injury that they are doing to their daughters by urging them to excel at their studies. As they approach puberty, girls should have freedom from all kinds of excessive work. They should be encouraged to go into the open air and take as much exercise as is possible without actual fatigue. Instead of their brains being used, it should be their limbs, except just before and during menstruation, when they should be kept quiet, at all events until regular menstruation has set in. They should keep regular hours and their diet should be nourishing but simple. The girl ought not to be kept in ignorance as to what she should expect at puberty through any false modesty on the part of the mother. As a consequence of this want of knowledge, I know of at least one case where a young girl was just beginning to menstruate for the first time but, only noticing a stain of blood on her underclothing, went in bathing. She was attacked by pelvic peritonitis and has ever since suffered from dysmenorrhœa.

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[1] Read before the Montreal Medico-Chirurgical Society, Dec. 18, 1896.

Once menstruation has become fairly established, we may relax our rules to a great extent, but there are few women who ought not to take especial care of themselves one week out of every four of their sexual life.

After this trouble has been once set up, what are we to do for its cure or relief?

In the first place, we must take the patient's personal equation into consideration if we hope to do her much good. Is she inclined to be neurotic or too introspective? If the latter, prescribe some regular occupation for her, but it must be one which will keep both mind and body occupied. In addition, you may prescribe a placebo or some simple tonic for her. If she is neurotic, advise some open air exercise, change of scene and the administration of nerve tonics. An excellent combination for these cases is one containing arsenic, valerianate of zinc and nux vomica, either in solution or pill.

Where the patient is a young girl just beginning to menstruate, you will often find that she is chlorotic, in which case this disease will require to be dealt with, and it is wonderful what an improvement in the pelvic condition can be effected in these cases by the judicious use of fresh air, wholesome diet and regular exercise and rest, combined with iron tonics. One of the best of these latter is Blaud's Pill with arsenic, although the compound syrup of the phosphates (Easton's), is also very useful. The condition of the bowels should be watched, the constipating effect of the iron being overcome by nux vomica, cascara, etc.

Under no circumstances should a local pelvic examination be made in these cases until you have conscientiously employed general remedies, and the girl should be encouraged to make as light of her trouble as possible, as an injudicious word of discouragement may convert her into one of those miserable neurotics, who wander from doctor to doctor without relief and finally fall into the hands of charlatans and quacks.

If the above methods fail after thorough trial, it will be necessary to make a thorough pelvic examination per rectum. The condition usually found will be one of mal-development of the uterus, and this must be corrected by attention to general nutrition and local measures. One of the best of the latter is the application of galvanic electricity, which may be applied by placing one electrode over the sacrum and the other over the pubes, or, if this fails after thorough trial, the sacral electrode may be replaced by one in the vagina.

Pelvic massage has been highly recommended by some for this variety of dysmenorrhœa (which one might call "developmental"), but I think that its utility is doubtful. For one thing, it is extremely difficult to employ it effectively on account of the abdominal walls of a nullipara being usually so tense, and, secondly, the necessary manipulations are apt to direct the patient's attention to her genitals.

The bicycle is a most useful assistant in this class of cases, but its use must be very carefully regulated. It acts, of course, by stimulating the general and pelvic circulation and also as an encouragement to take exercise in the open air.

In congestive or inflammatory dysmenorrhœa, the indications are, first, to discover the cause, and, secondly, to remove it. For example, a small sub-mucous fibroid of the uterus may partially block up the canal and cause congestion of the endometrium, which swells up and causes the pain at the menstrual periods. Here the indication is to remove the diseased endometrium, and this may best be done by thorough curettage. The application of the positive electrode of a galvanic battery is also an efficacious remedy, although, naturally, the treatment will require to be more prolonged than where the curette is used. A slower, but sometimes a surer, way of removing the diseased tissue is to use gradual dilatation and the application of iodine, iodized phenol or pure carbolic acid to the interior of the uterus. If the uterus is out of position, you must endeavour to replace it and maintain it in its normal situation. If this cannot be done on account of adhesions, these may be softened by using the hot douche, by glycerine tampons and the application of iodine to the vaginal fornices. These methods will relieve the congestion as well as soften the adhesions. In the majority of these cases the uterus will be found to be prolapsed, in which event the wearing of a properly fitting ring pessary will give great relief by supporting the uterus and ovaries and so relieving the congestion, and it is under these circumstances that the much abused pessary will most strongly prove its right to a place in gynæcological treatment. You should deplete the uterus and whole pelvis and try to restore the vessels to their normal condition. The flow of blood through the uterus may be lessened by giving ergot, hydrastis, viscum album, quinine and the like, all of which have a marked effect in causing contraction of the muscular fibres of the uterus.

Promote the activity of the bowels by salines for a few days and then keep them regular by cascara, liquorice powder, etc.

Moderate exercise such as walking or bicycling will be found of great service, this being so much better than carriage exercise on account of the effect the movements of the limbs have upon the pelvic blood supply. Some of the movements recommended by Thure-Brandt are also very useful in the same manner. The best are rotation of the limbs, their flexion and extension against resistance and rising and falling on tip-toes. All of these procedures determine the blood from the pelvis where more or less stasis has occurred, and cause it to flow more freely through the limbs and pelvis.

Locally, where the uterus itself is the seat of the congestion, much may be done by the extraction of blood from the cervix by either leeches or scarification. Boroglyceride tampons, galvanism, the application of iodine to the cervix and fornices, the judicious use of the sitz-baths (especially where the flow is slight) and the hot douche are also distinctly serviceable where you desire to reduce pelvic congestion. In an acute case, the application of hot stupes or else an ice-bag over the pubes will give great relief, as does also the application of a blister over each ovarian region.

A most useful form of treatment is gradual dilatation of the cervix by Hanks' dilators, etc., as was previously mentioned in connection with those cases complicated by the presence of a submucous fibroid.

Membranous dysmenorrhœa is probably a modification of the congestive or inflammatory form. Fortunately for suffering woman this is one of the rarest varieties of painful menstruation. It is also the most difficult to cure. Numerous methods of treatment have been instituted and highly recommended for this trouble, but that method which will cure all cases has still to be discovered.

One of the most highly praised methods is thorough cauterization of the interior of the uterus with the positive electrode of a galvanic battery, and this will doubtless cure many cases, especially if seen early.

Curretting, with or without the application of strong caustics, has many adherents, but, in the majority of cases, the membranes reorganize before many months elapse. Reamy, of Chicago, reports the cure of three patients by the following decidedly drastic method of treatment. Five days prior to one menstrual period, he thoroughly curretted the uterus, using first a sharp curette and then an inflexible one of dull wire. The cavity is then thoroughly cleansed by swabs of cotton moistened in a 1 per cent. solution of carbolic acid. This latter solution is then replaced by one of 2½ per cent. of the same acid, at least twenty applications of this stronger solution being made at the one sitting. A loosely rolled wad of iodoform gauze is placed in the vagina and the patient is returned to her bed, having an ice-bag over the hypogastrium. The menstruation now due is generally missed. The patient receives a similar treatment, except that the sharp curette is omitted, fourteen days after the first operation and two other curettings with the dull curette, followed by the application of the acid, etc., at intervals of from fourteen to seventeen days, the amount of tissue which could be removed being less and less each time. In the first case, the menstruation was normal after the third month from beginning treatment. The patient became pregnant soon after and was quite well after delivery. The second patient had one relapse, which was cured by one more course of treatment, while the third required but the one course.

Duke treats membranous dysmenorrhœa by scarifying the cervix three or four times weekly between the periods. Just before menstruation begins, he thoroughly curettes the uterus and introduces a spiral-wire stem pessary into its cavity. This is worn for three or four months, the patient taking daily hot douches, even during the flow. This, however, is rather risky treatment, as one cannot always watch the patient as closely as one would like to when she is wearing a stem pessary. His objects evidently are to deplete the uterus, remove the diseased mucous membrane and allow of free drainage of the uterine cavity, so that the tissue may not form again.

The *spasmodic* form of dysmenorrhœa depends in many cases upon constitutional conditions, such as strong neurotic tendencies, and can often be cured by drugs, one of the first indications being to restore tonicity to the nervous system by arsenic, nux vomica, zinc, etc. Anti-spasmodics are indicated just before the period approaches, and, as there is often more or less anæmia present, iron and chlorate of potash may be added with benefit. A favourite prescription of my former teacher, Dr. J. Halliday Croom, is for a mixture containing actæa racemosa, perchloride of iron, chlorate of potash and serpentaria, and I can bear witness to its undoubted efficacy in many cases. Olliver gives a combination of ammonium, potassium and sodium bromide nightly for one week midway between two periods and then

5 grs. of antipyrine every hour for six doses, if necessary, as soon as the pains are felt. He also recommends hot hip-baths when the discharge is scanty.

Cannabis Indica is a favourite drug to give and is especially useful where menorrhagœa is present. Nitro-glycerine, nitrite of amyl and viburnum are also highly recommended. Depletion of the pelvis is indicated and may be carried out just as with the other varieties.

Anti-spasmodics may be applied locally to the cervix with advantage. This was practised in olden times, when the patients were instructed to squat down over a basin of burning herbs, at the same time as they dilated the vagina by their fingers. Sir James Simpson used to employ the vapour of carbonic acid gas, either alone or combined with that of chloroform. The gas was formed by putting equal parts of tartaric acid and bicarbonate of soda into a bottle with a little water. It was then conducted into the vagina through a pipe.

In the majority of the cases of spasmodic dysmenorrhœa, there is anteflexion, with consequent endometritis and a certain amount of stenosis of the uterine canal, and these must be corrected before much relief can be obtained. This may be effected by dilatation of the cervix, either forcibly, by Goodell's or Sim's instrument, or else gradually, or, as some recommend, by dividing the cervix.

Dilatation is one of the oldest methods of treating stenosis of the cervix, Hippocrates stating "that where the orifice is very much contracted, it must be opened up with bougies or leaden instruments." It is also one of the best methods in the class of cases which we are considering. Many prefer forcible dilatation under an anæsthetic, thoroughly curetting the uterine cavity and inserting an intra-uterine stem pessary at the same time. This is undoubtedly good, but it is not always advisable to alarm the patient with the idea of an operation, when a similar or even better result may be obtained without an anæsthetic and with but little pain ; I refer to gradual dilatation with graduated bougies, as has been described elsewhere. This method is practically painless, if properly carried out, is continuous and very effectual, several cases having been cured by it in my own practice.

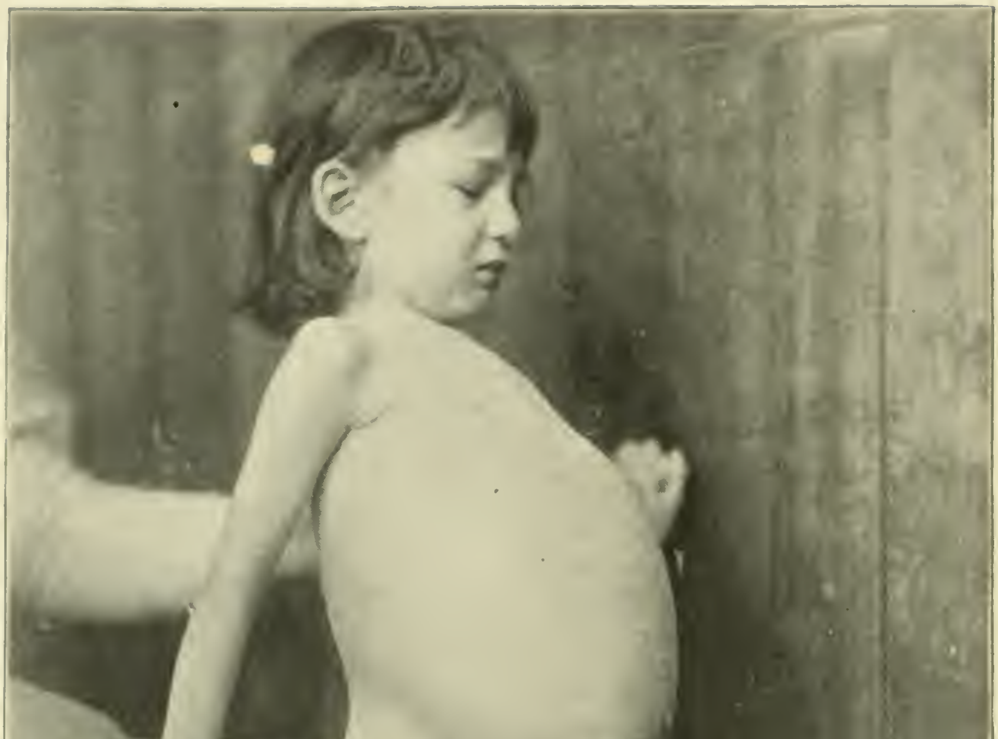
The use of tents dates back at least two centuries, mention being made of them in a book written in 1676 by Van Roonhuyse. He used tents made of "gentian radix, medulla sambucii, or even by a prepared dry sponge, having been first moistened in melted white wax and squeezed in a press to make of it convenient pessaries, according to the exigencies of the case, by which means the neck of the womb can be disclosed and widened and made to have its due purgations." He goes on to say that the patient may be made to wear an instrument (evidently a stem pessary) made of silver, ivory or horn, and prefers this treatment to divulsion of the cervix by the knife.

Most gynaecologists are opposed to the use of tents as they are apt to produce sepsis and pieces may become broken off and left inside of the cavity, but Poulet and Fraipont strongly recommend their use on account of their softening effect upon the tissues. They employ laminaria tents which have been preserved in a saturated solution of iodoform in ether, as they are then antiseptic and pliable. This is followed, where necessary by forcible dilatation, which looks as if the advocates of the tent had not very much faith in it themselves.

Electrolysis is employed to overcome the stenosis by some, a bulbous pointed electrode being used. High currents are to be avoided, one of from eight to ten milliamperes being all that is necessary.

Many writers say that it is impossible to cure spasmodic dysmenorrhœa by dilatation, on account of the uterine canal again closing up, but Howard Kelly says that it will cure forty per cent. of the cases. He refers to forcible dilatation, and, while I can give no actual statistics, I feel confident that gradual dilatation will produce as good results.

The old method of divulsion of the cervix, as practised by Simpson, is not to be recommended. He held that the chief seat of the trouble lay in fibres around the external os and began to make his incision below the internal os, cutting right through the cervix at its lower extremity. If you are going to use the knife at all (and it is necessary every now and then), your best way will be to make several nicks through the fibres at the internal os, as it is these which contract and cause the spasm. The canal may be kept patent by strips of gauze or a stem pessary. As for Dudley's operation, where a wedge-shaped piece of the cervix is removed, I consider it wrong in principle, as you establish a condition, which, when caused by parturition, frequently calls for operation. I refer to laceration of the cervix. If in the one case, this sets up a chain of symptoms requiring operation, why will it not do so in the other?



ON
SO-CALLED IDIOPATHIC DILATATION OF THE LARGE INTESTINE.[1]

BY

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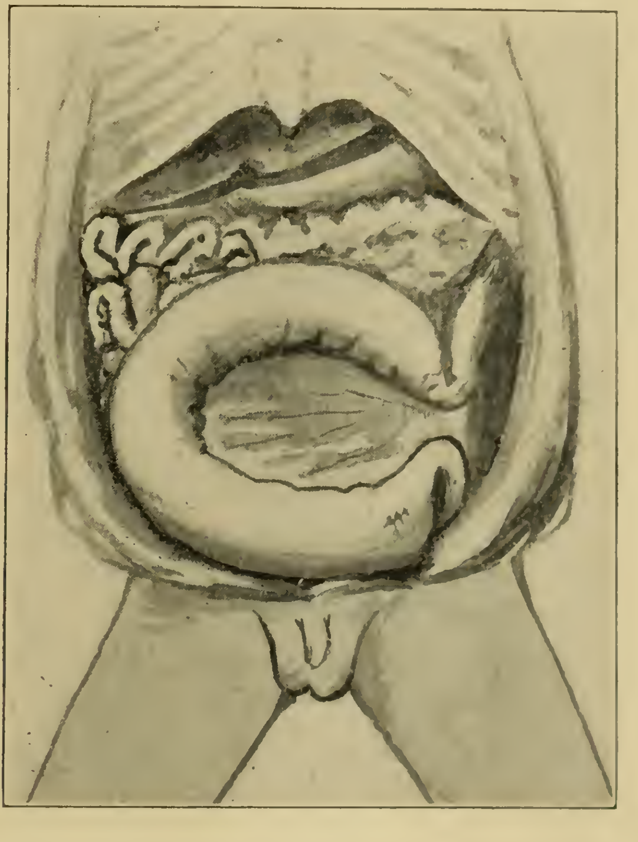
Medical literature of the past three years contains a few remarkable cases of unexplained dilatation of the colon and sigmoid flexure, which are of unusual interest to the pathologist and clinician. The condition has, without a single exception, proved fatal, baffling the skill of physician and surgeon alike, and yet the failure of methods hitherto employed, has stimulated suggestions in regard to treatment which may in future cases be of some benefit. A similar instance of the kind, which occurred a few months ago in the Royal Victoria Hospital, had, in addition, interesting features worthy of record in connection with the others of its kind so rarely seen by the clinician.



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[1] Read before the Montreal Medico-Chirurgical Society, November 20th, 1896.

It is interesting to note the marked similarity in the clinical histories of almost all the recorded cases. In nearly every instance there has been observed a more or less persistent constipation or other "trouble with the bowels" commencing within the first few days of life—necessitating the use of purgatives or enemata, which treatment is attended by varying success. Following upon this, comes either very early or within a few years, a noticeable abdominal distension—sometimes with frequent passage of flatus and progressively increasing constipation, resisting more and more the measures employed to evacuate the large intestines. Pain accompanies most of these cases and occasionally there are vomiting and intermittent liquid stools.

Examination of the patient reveals a distended tympanitic abdomen, with occasional localised lateral dullness from impacted fæces, and vermicular movements may often be seen. As a rule there is some pain on deep pressure. In every case, moreover, a rectal examination fails to reveal evidence of stricture, organic or otherwise, and there is never any appreciable obstruction to the insertion of catheters or syringes. It is true that in a few instances the clinician has suspected a spasm of the rectum and anus, but the observations made were never positive on this point. There is often progressive emaciation, though sometimes death is very sudden and unexpected, and the autopsy reveals no satisfactory reason therefor. The suggestion made by Peacock may, in a general way, be taken as satisfactory. "Death resulted from a disturbance of the vital powers in consequence of the mechanical injury of the intestine resulting from its extraordinary distension." The condition, moreover, is rarely associated with the usual symptoms of rachitis.

While as a rule the malady is fatal at an early age, it is nevertheless not incompatible with moderate health for many years, and cases which appear to have been congenital, have persisted for 28 years, as described by Peacock. Idiopathic dilatation of the colon may be present at birth, or appear later on in life, and in many of these latter cases the condition is regarded, though it would seem wrongly so, as congenital in nature. If a condition of dilated colon develop in adult life and the autopsy reveal no apparent cause, it is scarcely justifiable on this basis alone to regard the state as one undoubtedly congenital. Thus for example, in a case reported by Strahan, there was no disturbance of the bowels until adult life, and then within a few years a fatal issue resulted from colitis with dilatation, and no organic lesion was found to explain the origin of the trouble. The patient, however, was a lunatic, and, as was to be expected, disregarded entirely the necessary precautions to improve his intestinal condition, and hence constipation and irregularities were present which could readily induce the existing abnormalities. Indeed, Van der Kolk, as noted by Hurd, found a slight dilatation of the colon so common in the insane, as to associate the conditions very intimately, and the cause is doubtless that above given. The mere fact that no organic obstruction was found is not sufficient in itself to make one regard the condition as congenital, particularly when no symptoms whatever develop until the patient attains adult life.

It is of course of prime importance to distinguish between purely congenital cases and those which have been acquired at a later date, for dilatation of the colon as a result of (or at all events following upon) koprostasis is by no means uncommon. Many instances are recorded of dilatation of the colon coming on late in life, but these are nearly all associated with some condition interfering directly with the evacuation of the bowels, and are obviously due to chronic constipation with or without constriction of the intestinal lumen. Such for example is the case recorded by Little and Callaway, and that above mentioned by Strahan, while in the same connection may be cited the interesting condition described by Mr. Gay, where as a result of atony of the bowel following typhoid fever, chronic constipation supervened and with it marked dilatation of the colon.

So far as the congenital cases are concerned, it is not an unfrequent circumstance that antenatal stenosis or imperforate condition of the anus will lead to dilatation of the large bowel, either diffusely or in the form of diverticula. Cases of this kind may show equally well a series of symptoms and morbid anatomy resembling those seen in the apparently idiopathic congenital dilatations. Many instances are recorded, such for example, as those by Vulpian, Lacave, Dupleix and others ; but all these are quite evidently not idiopathic in the true sense of that word. (We understand by the term " idiopathic" in reality a confession of our ignorance, or at all events our inability to find the true organic lesion associated with the morbid anatomical condition present. For if " nothing is that errs from law," there must be some etiological factor to explain every case of abnormal dilatation of the colon).

In endeavouring to differentiate between cases that are acquired and those which are purely congenital in nature, no small difficulty arises, and while some would apply the term congenital to those instances only where the intestine has never from birth acted normally, the definition, it would seem, is too restricting. Several cases for example exist in the literature where within the first few months of life this condition has arisen and the autopsy has revealed no satisfactory explanation. Indeed, all gradations exist between the congenital idiopathic dilatation and that developing after several years.

Dr. Rolleston, in his interesting paper on this subject (to which I am indebted for several references), differentiates between acquired and congenital cases admitting, however, the impossibility of absolute divisions. He includes under the latter group only those where the bowels have never acted naturally and distension appeared soon after birth, while all other cases are classed as acquired. In the statistical table, however, which is included in his article, this classification is scarcely adhered to, inasmuch as the case of Little and Callaway above mentioned, is regarded as congenital in origin, although the symptoms developed only late in adult life, and if such a case be regarded as antenatal, it would seem unjustifiable to exclude at least six or seven others where the condition has arisen even in earlier childhood, though perhaps not co-incident with birth. There can be no question that in the majority of these cases some mechanical hindrance to the evacuation of the large bowel is the main immediate etiological factor, and though these may frequently be antenatal, it could scarcely be regarded as associated with changes which have arisen in the earliest days of life in the embryo.

The cases of idiopathic dilatation of the colon or sigmoid which occur, might perhaps be classified as follows :

1. Those in which the symptoms occur at birth, either as constipation alone, or combined with distension of the abdomen (Rolleston's congenital cases). Of these there are very few on record, apparently only four cases about which there can be no doubt, viz. : those of Generisch, Osler, Hirschsprung and Peacock ; my own case is also to be herein included.

2. Those in which the symptoms develop shortly after birth (*i.e.*, within a few months), or where it is stated that "from earliest infancy" there was one or other sign present.

These cases are more numerous, and though they cannot be definitely called congenital, they so closely resemble them as to be practically identical, and are more than probably of congenital origin. These are recorded by Walker and Griffiths, Eisenhart, Hughes, Formad, Osler, Bristowe, Gee (2 cases) and Rolleston.

3. Those developing after several years and associated with no pathological lesion. Such is Gee's, subjoined, in which the symptoms appear to have commenced only after 4 years of age.

4. Those cases which occur only in adult life, which can likewise be explained only as idiopathic (*i.e.*, with no organic lesion to suggest a clue as to the cause). Of these, there are many cases too numerous to mention, *e.g.*, those of Herringham and Bruce Clarke, Little and Callaway, Hadden, Lewitt and many others.

The following table will explain these various cases and include a few details concerning each :

CASES OF "IDIOPATHIC" ENLARGEMENT OF LARGE INTESTINE.

	Date.	Sex	Age.	Date of Onset.	Earliest Symptoms	Early constip'n.	Operation.	Death.	Part affected
Undoubted Congenital Cases.									
Peacock	1872	M.	28	At birth	Constipation	Yes	No	Sudden	Whole large bowel.
Hirschsprung	1892		2 months	"	" and Dist'n.	"	"	Yes	Chiefly transverse colon—rest less so.
Osler	1893		7 "	"	" "	"	"	In statu quo.	
Generisch	1893		1¼ years	"	" "	"	"	Yes	Colon.
Author's	1896	M.	3½ "	"	Constipation	"	Two	"	Sigmoid chiefly.
Probable Congenital Cases.									
Walker and Griffiths	1893	M.	11 years	A few weeks after birth	Distension	No	No	Yes	Colon and sigmoid.
Hughes	1887	M.	3 "	Early infancy	Constipation	Yes	"	"	Sigmoid chiefly.
Formad	1892	M.	23 "	Before 1½ years	Irregular bowels—slight abdominal enlargement	Irregular	Exploratory only	Sudden	Colon mainly.
Gee	1884	M.	4½ "	3 months	Constipation	Yes	No	Yes.	Sigmoid.
Gee	1884	M.	4 "	1 month	Distension	"	"	"	Sigmoid and colon.
Rolleston and Haward	1896	M.	12 "	2 months	"	"	"	"	Colon and sigmoid.
Osler	1893	M.	10 "	"Early in life"	" and cons'p'n	"	Yes	*Recovery for 2 years	Sigmoid mainly.
Bristowe	1885	F.	8 "	"Long time constipated"	Constipation	"	No	Yes	Sigmoid and colon.
Hadden	1893	M.	11 weeks				Yes	Yes	Small and large intes.
Dubious Cases.									
Gee	1884	M.	5½ years	4½ years	Distension	Yes	No	Yes	Sigmoid and colon.
Lewitt	1867	M.	21 "	12 (?) years	Constipation	At 12 yrs.	"	"	Colon and sigmoid.
Eisenhart	1894	F.	35 "	Always constip'd.	"	"	"	"	Sigmoid.
Strahan	1893	M.	32 "	17 years	Sudden pain and distension	No	"	"	Sigmoid and colon.
Little and Callaway	1850	M.	34 "	(?)	Distension and constipation marked at 33 years	No	Puncture	Yes	Sigmoid and colon.

* Operated on two years later for obstruction and died.

As will be observed from the above table, the cases which have certainly arisen coincident with birth or before it are but five in number, while at least eight are recorded where the onset of the symptoms appeared so soon after birth that it is difficult to ascribe to these an origin different from the five undoubted congenital cases. In several instances the conditions are so similar in all respects that one is scarcely justified in regarding them in the light of non-congenital (*i. e.* acquired) cases in contradistinction to the five instances mentioned.

So far as constipation alone is concerned, it is difficult to believe that this in itself is the cause of the malady, but it is much more probable that the gas developed in the intestine would equally well induce a kinking and functional closure of the intestines, particularly when with a lax meso-colon the bowel may become twisted. The cause is obviously purely mechanical, and while numerous theories have been advanced in practice, none have proved entirely satisfactory as applying to every case on record.

Among the most commonly cited of these are the following:

1. An unduly lax meso-colon, by means of which there arise kinks in the bowel, consequent constipation, and gradually increasing distension.
2. Immoderate or anomalous development of the tissues of the sigmoid flexure or colon.
3. Undue length of the sigmoid flexure in early infancy, combined with habitual constipation.
4. Defective innervation of the intestinal muscles.
5. Spasm of the rectum.
6. Adhesions.
7. Colitis, and hence weakened intestinal wall.
8. Contracted meso-colon at one place.

Case Report.

Without discussing at the present time the value of these different theories, I will now pass on to describe the case that has come under my notice, after which it will be possible to discuss which of these theories best accord with the conditions therein recognized.

For the notes of the clinical history I am indebted to Dr. H. S. Shaw, senior resident surgeon.

W. E., aged 3½ years, a male Canadian child, was admitted on January 3rd, 1896, to the surgical wards of the Royal Victoria Hospital on account of persistent constipation. The history given by the mother was briefly as follows: At birth the patient seemed to be well in all respects except that the bowels did not move for five days. A purgative was then administered with good effect. During the first part of his life, the child was constantly constipated, sometimes for as long a period as eleven days. This necessitated the periodical administration of glycerine suppositories and castor oil, which generally produced the desired effect, flatus also passing frequently and freely. For the first year no enlargement of the abdomen was observed; the child suffered no pain and was in all respects a quiet baby. At the end of the first year, however, gradual and progressive enlargement of the abdomen supervened until the child had attained the age of 3½ years. From time to time the abdominal distension lessened, and flatus passed freely, but the bowels were inactive unless purgatives or injections were persisted in Pain was observed merely a few months before admission to the hospital, and was then associated only with defæcation or injections. The stools presented at first large scyballous masses, and, later, semi-solid evacuations, with two intermitting attacks of diarrhœa.

At the end of December, 1895, the constipation became alarming and no flatus was passed; the distension and pain became more marked than ever before, while purgatives and enemata seemed useless; friction over the abdomen proved equally futile. Two days before admission, however, a large evacuation was obtained, and, with it, a large amount of flatus was passed.

The *personal history* was negative.

The *family history* was of considerable interest in one respect, namely, that one other child of the family had been observed at birth to present an unusually large abdomen, and likewise to require enemata and purgatives from time to time. This child lived but three months, with this condition unaltered, the fatal issue being brought about by an acute broncho-pneumonia. No autopsy had been made.

Condition on admission—The child is pale, fairly well nourished, sleeps well, and suffers but little pain, except at stool. The tongue is clean, the appetite good, and the bowels obstinately constipated.

The abdomen is very greatly distended, having a girth of 68 cm., and is uniformly enlarged. From the ensiform cartilage to the pubes the measurement is 33 cm. Vermicular movements are distinctly seen over the lower half of the abdomen and apparently associated with the distended colon. This part of the bowel presents as an elongated prominence, running obliquely across the abdomen, and varying in position from time to time, and particularly with the vermicular movements. The movements are both spontaneous and easily excited by examination. On palpation there is marked gurgling; the abdomen is soft, unresistant to the touch, and there is no tenderness. Fluctuation is sometimes elicited in the flanks, but seems to vary greatly and is probably associated with fluid in the intestines. Percussion yields a tympanitic note throughout, except for a modified dulness on each side low down.

The hepatic and splenic dulness are normal. On auscultation there are borborygmi heard, but otherwise no abnormality. The rectum showed no signs of disease nor stricture. The urine is normal. In the chest there is no evidence of disease, beyond that induced by the pressure upon the diaphragm from below. An operation was performed by Dr. Bell on January 16th, and the abdominal cavity opened in the median line, giving exit to a small quantity of serous fluid. The distended bowel was found to consist of sigmoid flexure, whose diameter was 9—10 cm. There was elsewhere no signs of collapse of the bowel or stricture, nor could any obstruction be detected. The rectum was examined again, but found perfectly free, and the abdomen was therefore closed and nothing further done.

The patient recovered well, and the bowels moved by means of enemata and the distension was markedly diminished, though the girth was never less than 55 cm. The condition, however, otherwise remained in *statu quo*, so a second operation was performed on January 30th, and an incision made in the left inguinal region. Bougies were introduced per rectum to empty the large bowel, but failed to move some impacted fæces. Accordingly large trochars were employed and the bowel punctured in the abdominal cavity, and semisolid fæces were then pushed out of the dilated sigmoid flexure, and the wound thereafter sutured in the usual manner.

For five days the patient did well, but on the sixth day symptoms of perforative peritonitis developed and death ensued.

The *autopsy* was performed 17 hours after death and the following notes from the report are abstracted concerning the conditions of the abdominal cavity:

The operation wounds are both almost entirely healed On opening the abdominal cavity fetid gas escapes, and about 400 cc. of creamy, greyish fluid having a fæcal odour is removed. It is for the most part free, but in portions is sacculated off by the recent plastic adhesions in the peritoneum. There is a very recent general peritonitis: the omentum for the most part covers the small intestines and is adherent to the lower end of the sigmoid flexure. The visible intestines are covered with a plastic exudate, and the coils are loosely adherent to each other. The lower half of the abdomen is occupied by the enormously distended and hypertrophied sigmoid flexure, which lies completely across the abdominal cavity with its concave border looking to the left. The upper half of the loop is the wider and longer, measuring 20 cm. x 8 cm., while the lower half is 15 cm. long x 5 cm. in diameter.

There are fairly loose adhesions between the two portions of the loop, as also between the end of the sigmoid flexure and the left abdominal incision. There seems to be a thickening of that part of the meso-colon which approximates the two ends of the loop and causes traction on the lower end, thus creating a partial narrowing of the lower portion. The sigmoid immediately above this narrowed part is dilated with a pouch formation on its inferior surface, evidently caused by gravitation of accumulated fæces.

On the outer and lower surface of the sigmoid are a number of Lembert sutures to which the omentum is adherent. Union is complete, except at one median point where a small perforation, 2 mm. in diameter, indicates the evident origin of the peritonitis.

On opening the sigmoid, solid fæces weighing 850 grms. are removed, the wall is greatly thickened, measuring on an average 5 mm. The mucosa itself is normal without any ulceration. The rectum is of about normal size and thickness, and there is nowhere any evidence of constriction.

The descending colon is also greatly thickened, somewhat dilated and its mucosa congested. Elsewhere the large intestine shows but slight hypertrophy and no ulceration. The total length of the colon from cæcum to sigmoid flexure is 50 cm. The sigmoid itself measures 38 cm. The cæcum, appendix and small intestines appear normal in all respects except for the plastic peritonitis on their serous coats. So far as the other organs and structures are concerned, there was nothing of importance detected.

The interest in the above case then concerns the same features as those already observed in the first four cases found in the above table as being undoubtedly congenital in origin.

The condition is most like that described by Curschmann in his article on topographical clinical studies, where he specially notes that in early life the sigmoid is relatively larger than the rest of the large intestine and that we often find a persistence of the infantile condition. This he describes as often monstrous, and records 15 cases out of 233 examined. From his observations it would seem that the sigmoid is very prone to congenital volvulus, especially when there is a marked approximation of the two ends of the limbs of the loop. The meso-colon thus becomes fan-shaped, the widest portion of the fan corresponding to the loop within, the narrowest part being where the two ends of the loop are approximated (as in the figure). This portion, according to Curschmann, is nearly always more opaque and thick than other portions, because of chronic inflammation, hence retraction, chronic constipation and dilatation of the intestine above. It is worth noting in this connection that Jacobi in his clinical lectures on paediatrics likewise considers this antenatal condition of the sigmoid flexure as an important factor in the production of infantile habitual constipation.

The *diagnosis* rests upon the combination of symptoms and signs already referred to, the main features being :

1. Constipation in early infancy, sometimes with intermittent diarrhœa.

2. Early distension of the abdomen with exacerbations and remissions according to the success in evacuating the flatus and intestinal contents.

3. Evidence of a dilated colon from physical examination.

4. Absence of any constriction at the anus or in the rectum. Sometimes emaciation.

5. Pain and tenderness, not usually marked, except when copious enemata are employed.

Rolleston has pointed out that the condition is much more common in males, a fact confirmed by the additional cases from the literature which have been included in the above table.

The *prognosis*, as indicated above, is most grave, not a single case being permanently cured. The case under Dr. Osler, which was operated upon and an artificial anus created in the dilated sigmoid, remained well for nearly two years, but it appears from references made to this by Dr. Rotch, that the symptoms again returned and the patient shortly afterwards died, a second operation being performed. Sometimes death is very sudden and the autopsy fails to explain the reason. As a rule, however, gradually increasing constipation and distension prove so serious that nutrition fails, and either a fatal peritonitis ensues, or the patient dies from what was referred to above as " disturbed vitality from the mechanical injury."

The Treatment in all the cases has proved most unsatisfactory and the usual means of purgation are believed by most authorities to only aggravate the existing conditions. In the present instance it is certain that the enemata increased the child's sufferings, rendered it much more nervous and did little to give more than very temporary relief. Purgatives were equally useless. Massage was employed by the child's father but was likewise found futile ; in fact Rolleston emphasizes the danger of such a method and the liability of rupture of the bowel where ulcers have existed.

All operative measures have hitherto been unsuccessful and the various incisions and punctures produced relief for but a short time and death resulted either from shock or peritonitis. But the rationale of an operation performed upon the enlarged intestine itself, may well be questioned inasmuch as the paralysed condition of the muscle wall would render the evacuation of the bowels still difficult, and it is evidently for this reason that Rolleston has made what seems an admirable suggestion viz :—To open the lower end of the small bowel where there will be no obstruction to the out-flow of fæces and by this means to relieve the distention and accompanying symptoms.

Where any kink has formed or where there is contraction of the meso-colon one might expect by relieving these conditions to obtain a good result only in those cases where the dilatation had not become excessive, otherwise it would seem that the diseased condition induced by the stretching and hypertrophy would be irremediable.

Where indeed very much hypertrophy and distention have occurred and the symptoms are in no way relieved, it may truly be said that the large intestine where affected is to all intents and purposes a foreign body and it may therefore be reasonably considered whether total extirpation of the affected portion is not commendable and whether an operation for intestinal anastomosis could not easily be performed between the two healthy ends remaining. This could be attempted either between the unaffected colon and the rectum, or if the whole upper colon be involved an anastomosis could be accomplished between the lower end of the ileum and the remaining portion of the healthy rectum. In this way fæces would have a ready escape and the sphincter action of the rectum and anus would remain intact. This could be done either by means of an end to end anastomosis, or, as my friend Dr. A. E. Garrow has suggested, better still by a lateral anastomosis which would thus obviate the liability to intussusception and prolapse.

My best thanks are due to Prof. Adami for the appended drawing, and to Dr. Patrick for the accompanying photograph.

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ON THE DIFFERENCE BETWEEN SERUM AND BLOOD SOLUTIONS, THE CONDITION OF THE TEST CULTURE AND THE SIGNIFICANCE OF BACTERIUM COLI INFECTION IN RELATION TO TYPHOID DIAGNOSIS.

By

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We wish to report some details concerning technique which we find necessary in order to insure successful results in Serum Diagnosis by the dried blood method, with which we have now tested over 500 bloods.

We mention the facts only in so far as they have a direct practical bearing on diagnostic work.

Our results already published were as follows :

1. Out of 129 cases, which we had good reason to regard as true typhoid, if we exclude a few cases where the first samples were taken at a very early stage and no re-examinations could be obtained, and also a few cases first examined late in convalescence, we have met with but one apparently genuine case of severe typhoid, which, when re-examined under satisfactory conditions, did not give a decisive reaction by the dry blood method and this one also gave no reaction by the serum method. Occasionally the first appearance of the reaction is delayed beyond the end of the first week.

2. We have never met with a well marked reaction under conditions where there were not strong reasons for believing it to be due to typhoid.

3. In a few cases where the result of the blood examination remained in doubt the mild type of the fever made an accurate clinical diagnosis impossible. In such cases, we believe bacteriological examination to be the most exact method of procedure.

4. We have not yet met with a case of typhoid where a decisive reaction was obtainable by the serum method and not by the dried blood method.

5. We found that pseudo-reactions may be avoided by attention to the character of the culture media. We have found that by using an attenuated or quiescent stock culture grown at room tempera-

ture, and transplanted at intervals of about one month, a suitable degree of sensitiveness was obtained. From such stock cultures a 24 hour bouillon at 37°C., with a moderately diluted blood solution, or serum would give prompt and decisive reaction within a few minutes in the case of typhoid patients, while concentrated solutions of non-typhoid blood or serum were found to give no reaction, even at the end of 24 or 48 hours, hence estimation of the amount of dilution is not necessary for ordinary diagnostic work. (See circular, Board of Health, Prov. of Quebec, Jan. 7th, 1897.)

The reaction, although specific in degree, is now generally considered to be quantitative, and small amounts of the agglutinative substances are admitted to be present in varying amounts in non-typhoid bloods. The specific substances are, however, a hundredfold more abundant in typhoid blood.

With virulent cultures, the presence of agglutinative substances in non-typhoid bloods may lead to pseudo reactions occurring which can usually be excluded by estimating quantitatively the intensity of the reaction. These pseudo reactions we have found to be characterized by a rapid clumping, without the corresponding loss of motion so characteristic of the true reaction. If watched for some hours these clumps tend to break up.

Quantitative estimation is now generally done by diluting the typhoid serum, but may also be done by modifying the virulence of the culture.

The degree of dilution which can be employed with a given blood solution or serum, while still producing a decided reaction, will depend entirely on the activity (virulence) of the culture employed. This factor has been too much left out of the reckoning in much of the work already published, and it probably affords a natural explanation of the widely different results obtained by competent observers.

Cultures which are made active and virulent by frequent (daily) transplantation and growth at body temperature, are much more sensitive to the agglutinative substance than cultures which have become quiescent and attenuated by infrequent (monthly) transplantation and growth at room temperature.

This is apparently at variance with Pfeiffer's statement (*Cent f. Bakt* XIX and XX.), that highly virulent cultures are less influenced by typhoid and cholera sera than less virulent ones. No details are given by Pfeiffer as to the conditions under which his non-virulent cultures were kept. Pfeiffer's statements refer to serum and not blood solution, he pays little attention to the agglutinative and much to the paralytic phenomena of the reaction, and attaches most importance to certain disintegrative changes produced by his special method of testing *in vivo*. We have stated elsewhere that highly active cultures, if left for a few hours longer than usual between the times of transplantation, rapidly undergo involution changes, and while in this condition are far more liable to show agglutination than was the case with the same cultures tested a few hours earlier. We have found that for class purposes involution forms in cholera are as abundant and striking in a virulent culture left unchanged for three or four days as would be the case with a non-virulent culture, grown at room temperature, if left without transplanting for as many weeks or months. Bouillon cultures, which have stood long without transplanting, show a tendency to spontaneous partial clumping, which is quite absent during the first 24 hours. For this reason we prefer to use 24 hour bouillons, which are free from sediment, for the test.

The peculiar disintegration obtained by Pfeiffer in typhoid cultures placed directly in the peritoneum of a specially immunized animal, does not tend to occur where the serum is tested in vitro by the hanging-drop method. With blood solution, however, this peculiar phenomenon is frequently witnessed. The clumped bacteria, if watched, for an hour or so, may be seen to break up in granules, which gradually become indistinct and vanish whilst under observation until practically no trace remains of the clumps which shortly before studded the entire field of the microscope. The change is more liable to occur in cultures some days old than in young cultures, and more, perhaps, with attenuated than virulent cultures. It does not occur with all samples of typhoid blood, and is not well marked in very dilute blood solutions.

This greater tendency to bacteriolytic action in blood solutions often makes the reactions obtained with them look at first sight less striking and intense than that obtained with serum where the clumps usually remain intact Apparently, however, the difference indicates that a large amount of the bactericidal substances originally found in the plasma do not permanently remain as constituents of the serum. This not only has an obvious bearing on serum therapeutics, but explains how the action of serum may be modified by mechanical mixture with the fibrin elements of the blood.

Quantitative estimation of the degree of dilution in the case of blood solutions is possible by hæmometry as well as by making direct measurement. With samples of freshly dried blood, sufficiently accurate observations can be made to express the degree of dilution in multiples of 10—($\frac{1}{10}$ $\frac{1}{20}$ $\frac{1}{50}$, etc.)

We have employed a cell having a depth of 0·85 mm. and giving with a Fleischl's hæmometer a tint reading 100 p.c., with $\frac{1}{10}$ dilution of normal blood. In anæmic cases the dilution will vary with the degree of anæmia, which can readily be determined. Blood dried for some time gradually yields less and less hæmoglobin, owing to the change of this substance into the hæmatin compounds. This change goes on rapidly in air where gas is being burned and slowly in pure air. In any case, the error is in the direction of a less dilution than that shown by the hæmometer. As a matter of experience, we find exact estimation of the dilution, while interesting for scientific purposes is not necessary for the practical purposes of the test if attenuated cultures are used, and the establishment of fixed arbitrary time limits, as recommended by Grünbaum, seem only of use in avoiding pseudo results, due to the use of highly virulent cultures.

Grünbaum, being enthusiastic for exact estimation of dilution in all cases, claims (*Lancet*, Sept. 19, 1896), that though most sera will in time produce clumping, that typhoid serum can still be specifically identified by its being the only serum, which, with free dilution in a ratio of 16 to 1, will produce a complete clumping and arrest motion in 30 min. A fixed dilution ratio, with an arbitrary time limit, appears to us quite uncalled for as a routine diagnostic practice, and has no standard value unless a culture of fixed virulence is used.

Since writing the above we find that Grünbaum has now stated on theoretical grounds "that possibly the use of attenuated cultures would enable us to dispense with the dilution" (*Lancet*, Dec. 19, 1896.)

We had anticipated *a priori* that the solution obtained from the dried blood would be less sensitive as a reagent than the fresh liquid serum. We find the blood solution on the contrary to be apparently more potent than the serum, in causing the agglutination though not as to the paralytic effect, and perhaps to give the reaction at a somewhat earlier stage of the disease. This view agrees with the researches of Widal, who found that the agglutinating substance was contained in the globulins and fibrinogen, and that the serum albumin and corpuscles contained none. Thus the blood serum contains only a part of the agglutinative substance. Dr. A. H. Appel of the U. S. Army has also recently made studies and observations showing the greater agglutinative properties of solutions of the whole blood as compared with that of the serum. A decided agglutination can be obtained from weak solutions of the entire blood when none is produced by stronger solutions of the serum. While Widal places the limits of dilution with serum below 1 to 200, R. Stern who employed solutions of the entire blood in bouillon reports reactions with dilutions of 1 to 2000.[1]

Owing to the greater sensitiveness of blood solutions as compared with typhoid serum, there is a greater tendency to pseudo-reactions if active virulent cultures are used, than is the case in working with serum. This difficulty is, however, completely obviated by employing attenuated cultures for testing. Cultures which exhibit darting movements in hanging drops are too sensitive for the dry blood test. Those cultures having a quiet but rapid gliding motion in hanging drops have given us uniformly good results. If the movements of the culture become sluggish, one or two daily transplantations at body temperature will make it more active and sensitive. One or two cc., of the living bouillon cultures injected into the peritoneum of a guinea pig produce immunity and a marked blood reaction without injuriously affecting its health.

Clean preparations containing very little fibrin can readily be obtained if care is taken not to stir up the film of blood clot and to use plenty of water for dissolving.

We find that the blood dries in a few minutes sufficiently to be enclosed in an ordinary letter.

Our routine method of testing is to place a large drop of water from a capillary pipette, on the film of dried blood and let it stand for a minute or two. A loop full of the solution so obtained is taken *from the top of the drop* and mixed with a loop full of the bouillon culture, or may, if desired, be diluted further.

For the re-examination of cases giving a negative reaction, a somewhat more virulent culture can be used or a quantitative estimation also made by the serum method. We have not succeeded however in obtaining a decided reaction by the serum when the result with the dried blood was inconclusive and now attach equal importance to a negative result by the dried blood test.

Our published observations (*N. Y. Med. Journal*, Oct. 31, 1896, *British Medical Journal*, Dec. 5, 1896), on the dry blood method were made with attenuated cultures, and pseudo reactions were practically never encountered.

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[1] We observe that Widal, who was the first to show that dried blood could produce the reactions, and already, in June, 1896, obtained reactions from serum after four months drying, has recently (*Semaine Med.* Jan. 13, 1897), reported that he has been able to obtain successful results by the dried blood method in the earliest stages of the disease and that the blood after six months drying retained the power of producing the reaction. The dried blood also gave him positive reactions late in convalescence in cases where agglutination had become very feeble. We are glad to find our published results on these points agree with those of so high an authority. We have found that with those who have had difficulties with the dried method, these have been due to their having acted upon the erroneous idea that the blood solution was much weaker than the serum whereas, even with attenuated cultures, we have got a reaction readily with it in dilutions as high as 1 to 125.

Later on, for a few weeks we tried active virulent cultures transplanted daily at 37°c.. but these gave us with the dried blood solution numerous and very peculiar pseudo-reactions, i.e., reactions not due to existing typhoid. For instance, the blood of one of us (W. J.) when dissolved gave prompt and abundant agglutination with a virulent culture, while we habitually use it as a suitable negative control blood with attenuated cultures. A solution of the blood of the other (D. D. McT.) gave no reaction. (W. J. had typhoid fever 16 years ago; D. D. McT. has never had it). W. J's blood serum gave no pseudo-reaction with the virulent culture.

On resuming the use of the attenuated cultures described above, the pseudo-reactions disappeared. On re-examining, the blood drops which had given them with the virulent cultures no longer did so when tested with attenuated cultures, although dry blood from genuine cases taken at the same time still reacted typically.

For practical diagnostic work it may be stated that when a blood does not show a decisive reaction in a serious case of fever which has lasted over a week. the fever is almost certainly not typhoid. In very mild febricular cases the result may remain doubtful, unless investigated by an early bacteriological examination of the spleen pulp or stools.

In this connection we may state that we find that Elsner medium containing 25 per cent. gelatine instead of 10 per cent. will remain solid at a temperature about 30 C., and give visible typhoid colonies within 24 hours instead of 48.

Reaction with the Colon Bacillus.

Very little attention has as yet been paid to the clinical significance of serum reactions with colon bacillus. Courmont and Rodet have stated that typhoid blood serum reacts with colon cultures, while Achard and Chantemesse state that it does not. Widal states that he has studied quantitatively the intensity of reaction of typhoid sera with Coli, but has been unable to draw any important diagnostic conclusions from the results.

Various observers have reported colon reaction as being present occasionally in different chronic and acute diseases. This can readily be understood in the light of our present knowledge of terminal infections. One case, which at first strongly resembled typhoid but gave no serum reaction, has been recorded by Vedel who found a marked colon reaction and looked upon it as only colon infection, this opinion being confirmed by the subsequent events. Personally we have found reactions with the colon bacillus to be rare with typhoid blood or serum (even in cases when perforative peritonitis had occurred) provided the typhoid reaction was well marked. On the other hand we have been struck by the large proportion of positive colon reactions obtained in cases having step-ladder temperature and other symptoms strongly resembling typhoid but without the typhoid serum reaction. We think that under these circumstances the colon reaction may have a real diagnostic importance, and indicate that the colon infection whether occurring alone or as a secondary complication of typhoid may be playing an important part in the production of the patient's condition. The whole question of associated colon infection deserves further study.

The reaction can be tested with ease by placing a duplicate drop of blood solution or serum on the cover slip with the drop to be tested by typhoid culture and mixing it with a drop of colon bacillus culture, Pseudo-reactions can be avoided by using stock cultures kept at room temperature, and transplanted infrequently. Test cultures grown in bouillon from the stock at room temperature for 24 hours are free from scum or sediment, and give reliable results. The conflicting results just mentioned may have been due to pseudo-reactions having been taken seriously.

In our case of apparently genuine typhoid without serum reaction (on which, by the way, the test was first applied during the third week) the blood reacted very decidedly to B. Coli, producing typical clumping. The same held good of four other blood samples referred to us for examination as having a clinical course like typhoid, but with negative serum reaction. A complete colon reaction we have found to be exceptional in ordinary typhoid and its presence would indicate a condition of Coli intoxication sufficient to explain the existence of many symptoms giving to typhoid its general clinical features. Whether this excludes typhoid, is another question. W. H. Park has observed a case of fever with no typhoid serum reaction, where he was able to cultivate the typhoid bacillus by spleen puncture. Later on in the case however a relapse occurred and the reaction appeared. The possibility of a latent typhoid infection overshadowed by toxic phenomena, due to concurrent action of the colon bacillus is quite consistent with the generally accepted opinion that many of the symptoms in typhoid and especially the intestinal ones are due to secondary infection by B. Coli. It follows that in severe cases of typhoid type, with no typhoid reaction, the blood should be tested with a culture of B. Coli and a bacteriological study made by examination of the stools or by spleen puncture.

In a few cases we have met with a partial typhoid reaction only, in mild cases clinically febricular, where the fever subsided by lysis in within two weeks of the onset. Here, the possible presence of typhoid appeared to indicate the prudence of keeping the patients in bed and avoiding articles of diet which are contra-indicated in typhoid. Our experience has been that febriculæ, with completely negative blood reaction, get suddenly well after a few days of fever. Here, also spleen puncture, as in Dr. W. H. Park's case, might enable a decided diagnosis to be made earlier than by the blood test alone. Wesbrook recommends spleen puncture under the circumstances. The possibility of infection by organisms resembling the typhoid bacilli must naturally be borne in mind.

Diabetic blood has been found by Block and by W. H. Park, to give a decided agglutination. We have examined two cases of diabetes, which both gave perfectly negative results.

CONCLUSIONS.

The difference in reaction observed between typhoid blood solution and blood serum is not simply due to varying intensity, but to an alteration in the relative prominence of the agglutinative, paralytic and disintegrative phenomena which constitute the reaction. The extent of this difference varies with the virulence of the culture, but the difference probably depends also on the presence of part of the specific substances elsewhere than in the blood serum.

Blood solution has a greater capacity than blood serum for producing the disintegrative (bacteriolytic) changes described by Pfeiffer Descriptions of this phenomenon are conspicuously absent from the many recent accounts of the reactions with typhoid serum as observed in hanging drops.

The paralytic effect is relatively more marked with serum than with blood solutions.

Agglutination without stoppage of motion is more readily occasioned in virulent cultures by blood solution than by serum, and does not indicate existing typhoid, nor occur with attenuated cultures.

It appears preferable that for the dry blood method only attenuated cultures should be used. These have the advantage of being more easily kept in readiness than virulent cultures, and are less sensitive to changes of temperature. With the serum method virulent cultures give prompt results. Dried blood serum can be readily obtained and transmitted to the laboratory by pushing aside the edge of a blood drop which has clotted for a few minutes but has not dried.

and collecting the serum beneath it on the tip of an ivory vaccine point. etc. This does not, however, give a quantitative result.

For ordinary diagnostic purposes, the simplicity of the method as originally described does not require modification, provided attenuated cultures are used.

A drop of the solution obtained from a dried typhoid blood drop, mixed with a drop of the culture, will give the reaction promptly, without any special attention to the degree of dilution. In order, however, to obtain the best results, it is well to dilute freely and especially to avoid having a sticky solution of syrup-like consistency.

In cases where the clinical type strongly resembles typhoid and where the serum does not give the typhoid reaction, a decided reaction with cultures of the colon bacillus may explain the symptoms.

Our results with the dried blood test have been very satisfactory, giving uniformly positive results with genuine and well marked typhoid cases, and not reacting with non-typhoid bloods when attenuated cultures were employed.

Although the use of serum undoubtedly enables the results to be recorded and compared with greater scientific precision, we find that dried blood answers just as well for routine diagnostic work.

The alterations in reaction induced by very slight modifications of the manner of testing, help to explain differences in the results reported by experienced and careful observers. With the same blood and culture, the amount of dilution possible largely depends on whether plain bouillon, bouillon culture or water is used for diluting. Opinions also vary as to what should be regarded as constituting a reaction. Personally, we do not think that anything less than complete clumping and total arrest of motion obtainable by the dry as well as the moist test in a young attenuated culture, should be regarded as typical.

A PECULIAR FORM OF FAMILY "TIC CONVULSIF" WITH NOCTURNAL EXACERBATIONS AND EPILEPTIC ATTACKS.[1]

BY

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The two following cases occurred in brothers and are recorded as presenting some unusual features:

Case 1. Jean Degan, aged 23, a French Canadian, was admitted to the Montreal General Hospital for twitching movements in the hands in December, 1896.

Family History. The patient's mother states that she suffered from chorea in childhood. She also gives an indefinite history of insanity previous to the patient's birth. A maternal uncle is affected by "nervousness" manifesting itself by following out any sudden order; if told to "strike" or "to drop" anything he does so at once. A brother (case II) is affected in a somewhat similar way to the patient, and all the members of the family appear dull and somewhat stupid.

The patient's birth was normal, not requiring forceps. He suffered from measles at 12 years of age. Although he attended school for four years he is quite illiterate.

Previous to the onset of the convulsive movements, was affected in a similar way to his uncle, and if given any sudden command was obliged to carry it out. On one occasion he rendered a little girl insensible by a blow on the chest at the suggestion of a mischievous individual.

His present trouble came on six years ago. On returning from the lumber camp his friends noticed that his arms and hands were affected with shaking movements.

In June, 1894, he had a fit, and during the present year there have been three similar seizures. The attacks are preceded by irritability, indistinctness in speech and dulness of hearing. They are marked by sudden rigidity of the body, lasting several minutes, but not accompanied by biting of the tongue, involuntary micturition, or cyanosis. One attack occurred at night in bed. The twitching movements are much diminished for several days following a fit.

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[1] Read before the Montreal Medico-Chirurgical Society, January 15th, 1897.

Present Condition. The patient is dull and stupid. He speaks intelligibly but it is impossible to obtain a clear account of his illness from him. He is of good muscular development, 5 ft. 4 in. tall. Every few seconds a single twitching movement of one or other side of the mouth or a similar single contraction of the fingers of one or other hand is observed. The movements are slight in degree and are apparently unaffected by his attention being drawn to them.

In addition to these twitching movements, marked jerking incoordinate clonic movements are induced in attempting to perform any action. In attempting to pick up a piece of paper, he hovers over it for a few seconds, his hand swaying to and fro, and then suddenly pounces down and picks it up with a grasping, clumsy movement. When asked to button his shirt, these movements are often so marked that it is impossible for him to do so. They vary, however, considerably in intensity from day to day. He can convey a cup of water to his lips, occasionally, however, spilling a little from twitching of the hand. In attempting to touch the fore-fingers together, the twitching becomes so marked that he usually fails to do so.

During sleep both the twitching and the jerking incöordinate movements continue, and are, indeed, much increased. He is also restless when sleeping and throws himself quickly from side to side of the bed. He occasionally utters a guttural, grunting sound when asleep, but has had no evidence of echolalia or coprolalia during his waking hours.

The motor power tested by the dynomometer shows there is slight diminution, 20 to 22, instead of 25 to 30. Sensation is unaffected. The knee jerks are increased. The pupils react well to light and accommodation. The optic disc is normal and there is no nystagmus. There is some deafness in both ears, the watch being heard at three inches only. Dr. J. J. Gardner reports a double chronic catarrhal otitis media.

There is an eruption of scabies on the skin and evidence of a small quantity of fluid in the left pleura; a small encysted collection of fluid is present in front of the left side of the chest, displacing the apex impulse upward to the third space in the anterior axillary line. A trace of albumen was present in the urine during a stay of some weeks in the hospital, but no casts.

On January 18th, at night, he had several convulsive attacks, described by Dr. Ewan, who witnessed them, as follows: The onset is marked by clonic spasmodic flexion or extension of one or more fingers of one or both hands, followed by flexion or extension of the wrists, jerking forward of the shoulders, and, lastly, a general clonic spasm of the muscles of the trunk and legs; the back became slightly arched. These attacks shook the bed, and were followed by twitching of the mouth and closing of the eyes. Later on in the night he had three attacks, in which the arms were thrown wildly about and pounded on the bed or table. The eyes remained open and staring and the jaw closed; the extremities were somewhat stiff. There was slight flushing of the face, followed by pallor, but no incontinence of urine or biting of the tongue. The attacks lasted about half an hour and were accompanied by sounds like the yelping of a dog.

Case II.—Alex. Degan, æt. 20, first noticed shaking of the hands five or six years after an attack of inflammation of the lungs. Some months later he began to suffer from fits, the first coming on when being teased and tickled. These fits are chiefly nocturnal and occur with varying frequency at intervals of a week, or, again, of a month.

During the fits he loses consciousness, froths at the mouth, passes urine and once bit his tongue.

Present Condition. Intellectually he is brighter than his brother. but is also somewhat dull. When at rest, there is no motor affection, The twitching movements in the hands and face, noticed in the brother, are here absent when awake, but he presents precisely similar jerky and incöordinate movements on attempting any action, such as buttoning his clothes. During sleep, however, the twitching movements have been observed on a few occasions.

The tongue presents distinct jerky and tremulous movements. Owing to this, the speech is somewhat indistinct but not syllabic.

The motor power and sensation are normal. The knee jerks are diminished and brought out with difficulty The special senses are normal. There is no nystagmus and no albumen in the urine.

The diagnosis of tic is based in the first case on the characteristic twitching movements in the face and hands. In the second, these movements are much less pronounced, and were only observed when carefully watched for and at night. The movements present in both cases are of two forms, the one consisting of twitching movements in the face and hands, occuring when at rest at intervals of a few seconds; the second form is brought out by action and marked by jerking and incöordinate movements, which continue as long as the action is kept up. The diagnosis of tic is based on the former, although in the second case these movements were so slight as to be almost passed unnoticed.

The similarity of the second form of movement, jerky and incöordinate, was so marked in both cases as to at once suggest the identical character of the disease.

Another feature of tic observed in the first case was the history given of being obliged to follow out any quick command, and it is interesting to note that a similar condition existed in a maternal uncle.

The exacerbation of the movements during sleep was well marked in both cases, and both the single clonic movements like tic and the incöordinate irregular movements were then seen to best advantage. It is very generally recognized that the movements of tic and other spasmodic affections are lessened or absent during sleep, and although cases are recorded in which they continue, yet this is so unusual as to throw some doubt on the diagnosis.

It is now pretty generally admitted that tic and the allied condition of para-myoclonus are manifestations of the neuropathic subjects, and a few instances are recorded in which several members of a family have been so affected. Unverricht for instance records a family in which a brother and four sisters were affected with para-myoclonus (*Die Myoklonie, Wien* 1891) and Earald also refers to a somewhat similar incidence (*Berl. Klin Woch.* 1883, *M.* 51). In Unverricht's family the children suffered from epileptic attacks in early life. These gradually lessened in frequency and disappeared and later on the spasmodic movements came on.

In both the above cases the epileptic attacks followed the onset of the convulsive movements, and in view of the neurotic family history may be looked upon as expressions of heriditary nervous degeneration.

Although these cases are classified as "Tic," the features of this disease are quite subordinate to the other symptoms. In the first case the clonic movements about the face and hands are sufficiently characteristic, but in the second, they were only observed during sleep and when specially looked for. As Raymond remarks (*Clinique des Maladies du Système Nerveux, Paris*, 1896), numerous cases of tic occur in which the symptoms do not conform to any well defined type. Both the above cases are typical in the irregular movements occurring on movement, in the increase of the clonic movements during sleep and in the occurrence of epileptic seizures.

ENLARGED PROSTATE REMOVED BY SUPRA-PUBIC PROSTATECTOMY.

BY

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H. T. S., aged 61, had his first attack of cystitis, with retention, in September, '95. During this attack and always after it, great difficulty was experienced in introducing a catheter, owing to enlargement of the prostate. A gum elastic, with stylet in it, and well curved to the front, was the only kind of catheter that could be introduced at any time without causing great pain.

A soft rubber could not be passed, and the large silver prostatic catheter also failed to find its way in except upon one occasion.

The difficulty constantly experienced in introducing the catheter, the point of resistance, and the method of overcoming it, conveyed the opinion that the hypertrophied gland was impinging upon the internal urethral opening and pushing it forward.

Examination per rectum discovered the gland to be enlarged in the centre, the lateral lobes also markedly enlarged and pretty equally so.

Catheterisation during attacks of retention was pretty commonly accompanied with bleeding, followed by relief to the urgent symptoms, and the catheter would pass more readily for a few days. The patient would be able to urinate with less difficulty and the urine would become clearer.

From the date of the first attack, the patient required almost constant attendance. As time went on the enlargement of the prostrate increased, attacks of retention became more frequent, and, as the patient seldom succeeded in introducing a catheter, his condition became more critical. Internal and local treatment, rest and carefully regulated diet and daily catheterisation and washing out of the bladder were thoroughly and perseveringly tried, with the hope of lessening the size, or, at least, arresting the further increase of the gland, but proved ineffectual. It became more apparent as time went on that operation would have to be undertaken to relieve the condition. Small particles of gravel were washed out at times, and many unsuccessful attempts were made to pass a searcher and when this was accomplished careful examination failed to detect stone.

In the beginning of November, '96, patient's condition was as follows: General health fairly good, but failing; capacity of bladder and expulsive power still good; quantity of urine and sp. gr. about normal; small quantity of albumin persistently present; prostate very much enlarged, reaching tuber ischii on either side.

An operation having been decided upon, the patient was given preparatory treatment at his home, and on the 17th of Nov. was admitted to the Nicholls Hospital and preparation for operation completed.

On the morning of November 19th the patient was chloroformed by Dr. King, assisted by Dr. Boucher. I opened the bladder in the usual manner, as in suprapubic lithotomy, then divided the mucous membrane in the centre over the prostate and completed the division of the middle lobe with scissors.

The left lobe was first enucleated; this was done with the finger, assisted just at the first by the single blade of a large pair of dressing forceps. Then the right lobe was removed in like manner. As the hæmorrhage was severe, this part of the operation was completed as rapidly as possible and the bleeding controlled by free irrigation with hot water.

The patient was a large man; pelvis large and abdominal wall thick; the gland very adherent on the left side, consequently considerable difficulty was experienced. The bladder was stitched at each side and lower angle of the wound to the deeper tissues of the abdominal wall, a large rubber drainage tube inserted and the remainder of the bladder wall closed, fine kangaroo tendon being used for sutures; the abdominal wall above and below the drainage tube was closed with silkworm gut sutures and the usual dressings applied.

The patient made a rapid and complete recovery. Highest temperature after operation 99⅘°.

The after treatment consisted of washing out the bladder night and morning with boric acid solution; drainage tube removed on the third day, then the washing was done through a gum elastic catheter, introduced through the wound. After a week, a soft rubber catheter was introduced through the urethra and the gum elastic still through the wound and the washing done in that way until the wound became too small to admit the catheter, when it was continued through the soft one in the urethra.

Patient passed urine on 21st day; wound almost closed, not more than a drop of moisture showing at site of opening. On the 23rd day, patient passed all urine naturally; wound completely closed. He went home on the 24th day. Since his return to his home I have repeatedly examined the bladder He has full power of retaining the urine four or five hours without any inconvenience and passes it in a full stream, with plenty of force.

A catheter introduced immediately after voiding urine enters without out the slightest difficulty. No residual urine, only a few drops escaping.

His general health is now much improved, he looks years younger and is able to attend to business as in years gone by.

The gland weighed 3¼ oz.

THE TREATMENT OF RHEUMATIC AFFECTIONS BY THE TALLERMAN-SHEFFIELD HOT-AIR APPARATUS.

(From the Medical Clinic of the Royal Victoria Hospital.)

BY

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AND

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In December last, Mr. Lewis A. Tallerman, of London, gave two demonstrations of the method of using his hot-air apparatus at the Royal Victoria Hospital before a large number of the practitioners of Montreal. Since then the apparatus has been in constant use in the treatment of various forms of subacute and chronic rheumatic affections. The results on the whole have been very satisfactory. Relief to pain has usually followed, and in nearly all cases there is soon noticed not only an improvement in the local conditions, but also a marked change for the better in general nutrition. In the present preliminary communication an account is given of three cases treated to a conclusion. In all it will be noticed that the results obtained are much more marked and satisfactory than by any other method at present known.

CASE I.

Subacute Rheumatism of Four Months Duration—Multiple Arthritis, Involving Chiefly the Shoulder, Knee and Vertebral Joints—Received Thirteen Hip Baths—Left the Hospital Greatly Relieved—The General Nutrition Much Improved.

CASE I.—A. T. L., æt. 42, was admitted to hospital on December 30th, 1896, complaining of rheumatism, he giving a history as follows: About the middle of September, 1896, he suffered from headache and feverishness. Towards the first of October pain and swelling set in in the left ankle, and still later in the right ankle and in both knees, giving a clinical picture of acute rheumatism. For about a month he suffered acutely, then the pain disappeared to some extent, but the patient was unable to walk, while with the disappearance of the pain in the joints above mentioned, he complained of pain in the spine and pain and stiffness in the shoulder joints so that motion was almost impossible.

Of his personal history it may be said that he has had repeated attacks of acute rheumatism, and in addition has had much mental worry consequent on business difficulties.

On examination after admission, the patient was seen to be a rather emaciated, poorly nourished man, with some anæmia, unable to remain in any position for any length of time, and suffering great pain on movement. He was unable to walk without crutches, and then only with great difficulty. The right shoulder joint was very painful on manipulation, and movement in all directions much limited; the same, but to a lesser extent, being the condition of the left shoulder joint. Motion of the vertebræ caused severe pain, chiefly in the lumbar regions. The knees were semiflexed, and could be with great difficulty extended, but could be fully flexed. There was nothing abnormal about the ankle joints. In addition to the above there was a faint systolic murmur at the apex, and the pulmonary second sound was accentuated. The other viscera were normal.

The patient was treated by the Tallerman-Sheffield Hot-Air Apparatus, and had in all 13 baths, with the result that at the time of discharge the pain and stiffness had been entirely removed from the knees, and the patient could walk without aid, but he still had slight pain in the back, and the right shoulder was a little stiff but not painful; the left was free from both pain and stiffness. The appetite and general health were much improved, notwithstanding that the patient had a severe attack of tonsillitis while in hospital.

CASE II.

Gonorrhœal Arthritis of the Right Knee of Four Weeks Duration—Inability to Walk or Even Stand—After the Third Bath He was Able to Walk About the Ward Without Assistance—After the Twentieth Bath, He was Discharged Free from Pain and with Good Movement in the Joint.

Case II.—J. L., æt. 22, was admitted to the hospital on December 18th, 1896, complaining of pain and swelling in the right knee, with inability to walk.

The history of the case is briefly as follows: In October, 1896, he contracted gonorrhœa, and up to the middle of November had a profuse urethral discharge. At this time the knee suddenly became much swollen and intensely painful; the conditions lasting about three weeks, when it became less painful, but was still swollen and very stiff. There was no constitutional disturbances other than rapid loss of flesh. Of his personal history nothing was ascertained save that he had used alcohol and tobacco to excess.

On admission the patient was found to be unable to stand without support, and could not walk at all. The knee could be flexed and extended but a short distance, while there was uniform enlargement of the tissues about the joint, but no increase in the synovial fluid. No other joint showed abnormality. The urethral discharge contained gonococci.

The treatment, as in the previous case, was the use of the hot-air bath. After the first application a decided improvement was noticed, while after the third the patient was able to get about the ward without assistance. In all he had 20 applications, and on discharge, January 27th, 1897, there was free movement of the joint and practically no pain in walking. Although there still remained some enlargement and deformity about the joint, his general health had much improved as evidenced by a gain in weight of 14 lbs. during the period of treatment.

CASE III.

Repeated Attacks of Subacute Rheumatism—Anæmia—Emaciation—Arthritis of the Right Knee and Shoulder—Marked Limitation of Movement in Several Joints--Air Treatment Quickly Followed by Relief to Pain—Marked Improvement in General Nutrition.

Case III.—J. H., æt. 26, was admitted to the hospital November 3rd, 1896, complaining of pain in the back and joints and difficulty in walking.

The onset of the illness is stated to have been six years previous, at which time he suffered severe pain in the right hip joint on movement or pressure. Two months later he had acute inflammation in the right knee and subsequently the ankles and shoulders became involved successively.

After being in bed for nearly a year, the patient began to move about on crutches, and, still later, was able to get about when using a cane, but not otherwise. The condition remained stationary, apparently, for the next four years, then he began to suffer from pain in the back, with progressive weakness and loss of flesh. In December, 1895, he had acute inflammation in the right knee, and this has persisted to some extent up to the present time.

Save that he had a great deal of domestic worry, his personal history was negative.

On examination, he was found to be emaciated and anaemic. There was enlargement of the right knee joint, due to fluid, and the joint was hot and painful, and, in addition, there was some enlargement of the right shoulder joint. There was limitation of movement in the left hip and in the left knee and right hip pseudo crepitus was easily demonstrated. The patient could not walk without a cane, and, when walking, there was limitation of movement about the pelvis, the trunk much bent forward, the feet widely apart, and he could not stoop to pick an object off the floor.

The examination of the viscera revealed nothing abnormal. This patient is still under treatment, but after the first application an improvement was noticed. He can now walk about without a cane, has become much more erect, and can pick an object off the floor readily. The effusion into the joints has disappeared and there is practically no pain either in the joints of the extremities or in the back. His general health has much improved, there being a much better appetite and a rapid gain in weight.

On Februrary 20, patient left the hospital practically well.

The Tallerman-Sheffield apparatus is made in various forms and sizes suitable for the different joints or limbs to be treated, viz., for the hand, arm, elbow, foot, leg and knees, and there is also one for the pelvic region. The hospital model, the one mostly supplied to institutions, is constructed so as to enable the treatment of the extremities and to obtain a general effect upon the body. Cylindrical in shape the apparatus is sufficiently long to admit a leg to some inches above the knee, the end through which the foot enters is furnished with a curtain which is bound round the leg, the distal end is furnished with a cap working on a pivot which acting together with valve taps at the top and bottom of the cylinder enables the moisture thrown off by the limb to be expelled or evaporated and the air contained in the chamber to be again dried.

The highest temperatures at which patients have been treated according to hospital reports are from 300° to 315° F., but the great value of the Tallerman treatment is the ability to administer these high temperatures over a period of upward of an hour if necessary. Experimentally a patient had been treated for more than two hours at a temperature averaging 260° F., without any other discomfort than lassitude on the following day, the skin was not unfavourably affected or unduly sensitive and it could be rubbed briskly with a towel when released. The therapeutic effects produced are relaxation of the part, copious and free perspiration over the whole of the body, enormously increased circulation and raising of the body temperature of from 1½° to 4° F. This last effect, so contrary to the belief hitherto held that the body temperature could not be raised by a local application of heat is remarkable, and it is the belief of Tallerman, will before long be shown to have a very material and beneficial effect in the treatment of diseases other than in the classes of cases which until now have been subjected to it, these are such cases as: rheumatism, acute, sub-acute and chronic, acute and chronic gout, rheumatoid arthritis, sprain, stiff and painful joints, gout, rheumatic sciatica, lumbago, peripheral neuritis, gouty neuritis, &c. Also before and after breaking down of adhesions, and kindred complaints.

The Tallerman treatment has been demonstrated at some of the principal London and other hospitals, and during the course of the three years supervision to which it has been subjected it has been proved that the treatment can be safely administered with benefit even where great debility, weak action or valvular disease of the heart or kidney disease are present. Rheumatic and other pains are relieved if not entirely removed shortly after the commencement of the first operation and that the treatment itself is not only absolutely painless but so soothing as to frequently lead to patients falling asleep if permitted whilst under it, hence the sleeplessness caused by rheumatic pain is relieved and patients are able to rest at night.

Clinical Lecture.

MITRAL STENOSIS—SUDDEN DEATH—BALL THROMBUS IN THE LEFT AURICLE.

(Clinical Remarks, Johns Hopkins Hospital, Jan. 13th, 1896.)

BY

WILLIAM OSLER, M.D.
Professor of Medicine, Johns Hopkins University.

Sudden death in mitral stenosis is very much less frequent than in aortic valve disease, and the cause which carried off the little girl of whose case I shall speak to-day is among the rarest of the complications of chronic valve lesions. I will ask Mr. Day, the Clinical Clerk in Ward G,, to first read an abstract of the history.

"Mabel M., aged 20, was admitted Dec. 15th, complaining of swelling of the legs and shortness of breath. She knows nothing of her family history.

"*Personal history.* She had diphtheria and scarlet fever when nine years of age. She had a discharge from the ears when she was about thirteen, and ever since has had "catarrh of the head," as she calls it. She began to menstruate at her thirteenth year. She was always well and strong, but for a year or more she had been short of breath on exertion. For the past two years she had been employed in a book-bindery, where part of her occupation was working a machine with her feet.

Present illness. About two months ago, while wearing a pair of tight shoes, she noticed a swelling beginning at the shoe tops. This gradually ascended to her hips. Then the back began to ache, and there was slight swelling in the lower part of the spine. On close inquiry she confesses that she has been for a long time short of breath on any such exertion as climbing the stairs or walking fast, and she has sometimes felt faint. The dyspnœa has been growing worse for the past few months, and in walking a square she would have to stop and rest. Lately she has had headache, and on waking in the morning the eyes are puffy. She has had loss of appetite and the bowels are irregular.

"*Present condition.* Patient does not look more than fourteen or fifteen years of age. She is well nourished, has a rather high colour, the cheeks are red, and the lips a little cyanotic. The facies is distinctly luetic—saddle nose, projecting forehead. There is cloudiness of the right cornea, and the upper central incisors are somewhat peg-shaped.

"Inspection of the chest showed a heart impulse in the fourth and fifth interspaces, the maximum in the fifth, 11 cm., from the mid-sternal line. The relative dulness was at the upper border of the third rib. On palpation there was a thrill at the apex, which varied a good deal in intensity. On auscultation the first sound was very snapping at the apex, and preceded by a rough. harsh. pre-systolic murmur, and there was a soft blowing systolic murmur passing towards the axilla. The first sound had a very sharp valvular character. The pre-systolic murmur was lost at the mid-axilla. There was a good deal of echoing over a limited area in the fifth space. In the second and third left intercostal spaces the second sound was very much accentuated. The second aortic sound was relatively feeble.

"The liver was enlarged, and could be felt 6 cm., below the ribs in the mid-sternal line. The legs were a good deal swollen. The urine contained a small quantity of albumin and a few hyaline casts."

During her stay in hospital she improved somewhat: the dropsy disappeared, the heart's action became slower, and she became very much more comfortable, though she still had the flushed suffused facies.

I saw her on Jan. 7th, and she seemed very well. The pulse was regular, and the heart's action seemed quite natural. At 4.30 A.M., on the 8th the nurse found her very cyanotic: she gave a gasp or two and died in a few moments.

Let me first call your attention to this drawing, which was made by Mr. Broedel, of the heart in situ, in which you see that almost the entire exposed portion was made up of the right auricle and ventricle; only a small portion of the apex of the left ventricle is apparent. It was noted particularly, too, that the auricular appendix of the left auricle was not visible. The heart, as you see, presents the usual anatomical features associated with an extreme grade of mitral stenosis. The mitral valve segments are thickened and adherent, the chordæ tendineæ greatly shortened, and the orifice just admits the tip of my index finger. There is no fresh endocarditis. The left ventricle is relatively small, the right ventricle very large, and the walls greatly hypertrophied. The right auricle, too, is a very capacious chamber with relatively thick walls. The left auricle is also very large, the endocardium very opaque, and the walls greatly thickened.

The most remarkable feature in the case is this firm ball-thrombus, which lay loose in the left auricle, occupying the funnel-shaped space leading to the mitral orifice. It is ovoid, measuring about 3 cm., in length and at one end is roughened, indicating an area of attachment. Beyond the venous engorgement of the viscera there were no other features of special interest. There were no lesions of congenital syphilis.

There can be but little doubt, I think, that the sudden death in this case was due to the dislodgement of the thrombus and the plugging by it of the narrowed mitral orifice, so that she really died of embolism of the left auriculo-ventricular orifice.

I call to mind another instance of sudden death due to embolism of one of the cardiac orifices. In a child aged three and a half years, (whose case I reported in the *Journal of Anatomy and Physiology*, 1880,) there was a striated myo-sarcoma of the left kidney, which had extended into the renal vein and inferior vena cava; portions of the sarcomatous thrombus had become detached, and a mass 2.5 by 1.2 cm., had plugged the tricuspid orifice, and a mass the size of a hazel-nut the orifice of the pulmonary artery.

These free thrombi in the cardiac chambers are very rare. The only other case I have met with, which is reported in Vol. II., of the *Johns Hopkins Hospital Reports*, occurred in a woman, aged 55, with mitral stenosis, who died in the Montreal General Hospital. In her case the death was not sudden. The thrombus was the size of a small egg, 3.5 by 2.5 cm. In the article referred to I have dealt briefly with the forms of cardiac thrombi, and particularly with the cases which had been reported up to that date, only five in number. I have not looked over the literature recently, and no doubt many additional cases have since been added.

I will refresh your memory by enumerating the various forms of thrombi met with in the heart chambers.

1. Globular thrombi, with sub-trabecular ramifications, which are common in the auricular appendices and in the apices of the ventricles in cases of extreme dilatation.

2. Mural thrombi, usually laminated, which occur in the dilated auricles, particularly their appendices, in the ventricles in cases of fibrous myocarditis, and in aneurism of the heart.

3. The pedunculated polyp-like thrombus—a very rare form—met with usually in the auricles.

4. The ball-thrombus, free in the auricle, which constitutes the rarest form of cardiac thrombus.

In all probability in this case the ball-thrombus had previously been attached in the auricular appendix, and sudden death followed its dislodgement.

RETROSPECT
OF
CURRENT LITERATURE.

Medicine.

UNDER THE CHARGE OF JAMES STEWART.

Two Years of Serum Treatment of Diphtheria.

CUNO ; Frankfort-on-the-Main. "Twei Jahre Diphtherie-heil-serumtherapie"—*Deutsche Medicinische Wochenschrift*, Dec. 12th, 1896.

The favourable reports on the results of serum therapy in diphtheria are accumulating and the review of the cases here reported makes the evidence in favour of the new treatment so much the stronger. It is thus that any new remedy is tested and thousands of cases are needed whereby there may be eliminated all possible sources of error.

Particularly interesting are the figures which Dr. Cuno presents, summarizing the cases during six years previous to that in which the serum treatment was begun, and which he contrasts with those of the two following years, 1895 and 1896, or more accurately from October, 1894 to October, 1896. The six years previous show a death rate of 37 to 38 per cent., 1510 cases having undergone treatment.

In the two years herein reported upon 483 cases were treated and 51 died. A death rate of 10.5 per cent.

It seems fair to the treatment but perhaps not just, so far as statistics go, to deduct from the number of those dead five who were admitted moribund and died within 20 hours, and twelve who died from other causes, the diphtheria having been healed. Thus the surprisingly low death rate of 7.03 per cent. is reached.

It is interesting in this connection also to note that in these cases all local treatment was omitted and only such treatment applied in addition to the serum, as seemed indicated, such as stimulant measures, and in cases of nephritis, hot-air bath, etc. The method of using the serum differed in no important manner from that in other hospitals.

Laryngeal diphtheria was found in 125 cases, 71 of whom recovered without interference, 54 were operated on, trachaeotomy being done. 31.5 per cent. of these cases died.

There is no report of intubation having been attempted.

Albuminuria did not appear to follow the use of the serum.

No outward effects of the serum working was traceable in any of these cases.

In 291 cases the bacteriological examination established the diagnosis and the mortality in these cases was 13·05 per cent. The other cases were diphtheria clinically.

OSLER. "Features in the Prognosis of Pneumonia."—*The American Journal of the Medical Sciences*, January, 1897.

The circumstances influencing prognosis Prof. Osler has set down in two groups:—General, as age, race and habits; special, as the degree of lung involvement, fever, complication, etc.

Beyond 60 years of age the death rate is very high, 50 to 60 or even 80 per cent.

The negro succumbs more frequently than the white. Then of course the previous habits of life and the condition of health at the time of the attack influence the prognosis very greatly. We are led to remark that the chief point which this instructive article of Prof. Osler's emphasizes is the element of toxæmia to which pyrexia and consolidation are subsidiary as prognostic points in this disease. This may be manifest in severe chill, early onset of cerebral symptoms and a case picture which is out of all proportion to the extent of the physical signs.

The blood may present no leucocytosis. Sudden death in many cases of pneumonia Dr. Osler attributes in all probability to the action of specific toxins on the heart-centres, thus favouring this view above that which attributes such a termination to the action of fever on the myocardium, or to the direct results of mechanical obstruction. Such influences however must be considered as factors ·

W. F. Hamilton.

The Paraplegia of Potts' Disease.

At a recent meeting of the Neurological Society, of New York, several valuable papers on the treatment of the paraplegia of Potts' disease were read. The contributors, chiefly orthopædic surgeons, were unanimous in the importance of mechanical treatment carried out, if necessary, for a year or longer.

Dr. N. M. Saffer's paper was based on forty cases treated among the poor in the out-patient service of the New York Orthopædic Dispensary, by the application of the Taylor spinal brace, in such a manner as to give firm support to the spinal column, but not to make special pressure, and keeping the patient in the recumbent position. Out of the forty cases, there were only four that did not show some indications of recovery, the great majority recovering within one year. The disease of the spine was present before the onset of the paralysis for a period of five years and upwards in thirty of the cases. In ten it was present between one and two years; in one for eleven, and in one for twelve years. In twenty-four of the cases the paralysis was solely motor, and in sixteen it was both motor and sensory. Of the twenty-four cases of motor paralysis, twenty-one recovered and three are still under observation. Of the sixteen cases of combined motor and sensory paralysis, eleven recovered. Of the thirty-two who recovered, fifteen walked well, with exaggerated knee jerks; five walked well with normal knee jerks; in the other cases there is no record of knee jerks. Four patients have been under treatment from six to ten years and are still paralyzed. The average duration of the motor paralysis was about seven months and of sensory paralysis ten months.

Dr. V. P. Gibney's paper was based on seventy-four completed cases. In forty-three there was a permanent cure of the paraplegia. In eleven there was improvement when the patients left the hospital, and there was reason to believe that many of these were subsequently cured. In eight there was no improvement, and death took place in thirteen cases. The longest duration of the paralysis was seven years, and recovery then followed. The shortest period was two months. In ten cases the paralysis lasted from four to six months. The average duration was about twenty-two months Dr. Gibney uses a jacket of plaster of paris. When there is much uncontrollable spasm he uses traction as well. He frequently employs the Paquelin cautery. He has great faith in iodide of potassium given up to the point of tolerance. Several of the speakers who took part in the discussion expressed themselves as being favourable to the use of iodide of potassium. It appears to act much more favourably when combined with proper support of the spine.

With hardly an exception, the speakers considered an operation should only be resorted to in cases where it was clear it was impossible to expect any beneficial effect from the rest and supporting measures.

Dr. de Forest Willard, of Philadelphia, who took part in the discussion, said that he had collected the histories of one hundred and thirty-four cases of operative interference for the relief of spinal paraplegia, the majority in children. In four, the result was not recorded ; in thirty-five per cent. of the remainder a successful result was claimed, but later reports showed that the symptoms recurred in some cases. In sixty-five per cent. of cases the patients either died or were not materially improved. One-fourth of the patients operated upon died from shock within the first day or two ; upwards of one-third died within one month after operation ; and nearly one-half died within a year. In the light of such results operation is clearly only indicated where all other measures have entirely failed. Leaving interference for such conditions renders any amelioration in the patient's condition very nigh hopeless. Possibly, with an improved technique, the immediate dangers (shock) would be greatly lessened.

James Stewart.

Surgery.

UNDER THE CHARGE OF GEORGE E. ARMSTRONG.

Castration and Vasectomy in Hypertrophy of the Prostate.

J. WILLIAM WAITE. "The Results of Double Castration in Hypertrophy,"—*Annals of Surgery*, 1895, Vol. I., p. 1.

A. T. CABOT. "The Question of Castration for Enlarged Prostate."—*Annals of Surgery*, 1896 Vol. II., p. 265.

DISCUSSION ON THE SURGICAL TREATMENT OF PROSTATIC HYPERTROPHY.—By David Macewen, M.D.; Reginald Harrison, F.R.C.S.; C. W. Monsell Moullin, M.A., M.D., F.R.C.S.; Dr. Sandberg; John Chiene, M.D.; F. A. Southam, F.R.C.S.; Charles A. Morton, F.R.C.S.; Jordan Lloyd, F.R.C.S.; J. Haddon, M.D., and J. H. Cameron, M.D.,—*British Medical Journal*, October 10, 1896.

The importance of the subject of enlarged prostate and its results, as manifested by the secondary changes which, in many cases, take place in the bladder, ureters, kidney and heart, gives great interest to any new suggestions as to treatment. Life is certainly shortened in a certain number of old men by the pathological effects of enlarged prostate. No man can have under observation an old man, with his pain, toxæmia and sleepless nights, without feeling himself stirred to do his best to find some means of relief.

The etiology of prostatic hypertrophy is still involved in obscurity. Dr. White thinks that the theory of Guyon that the disease is only a part of a constitutional condition peculiar to advancing years and characterized by arterial sclerosis, etc., and that of Harrison that the growth is compensatory in character and secondary to certain bladder changes to be untenable in the light of the information we now have. There seems to be some reason to think that it may be due to prolonged ungratified sexual desire. The function of the testes would seem to be twofold. (1) To control and determine the development of the characteristics of the male sex, and (2) to produce spermatozoa for the reproduction of the species.

Dr. D. Macewen thinks that in the performance of the first function, it is probable that a physiological product is formed, which becomes absorbed into the circulation and acts as a stimulant and nutrient to the tissues of the whole body. This is in harmony with the theory upon which a watery extract of the thyroid gland has been administered with such signal success in myxœdema, in which the thyroid gland atrophies and ultimately disappears. The disease myxœdema arises from the want of the influence of some unknown substance, which the thyroid gland, as is supposed, elaborates, upon the nutrition centres of the central nervous system. Professor Waymouth Reid, of Dundee, has expressed the opinion that the epithelial-like cells in the intertubular tissues of the testes. to which no function has yet been assigned, may possibly be concerned in the elaboration of the product in question. These cells, which are found within the lamellæ of the intertubular tissue, are larger than lymph cells, and exactly similar to epithelial cells, and form large continuous groups. Griffith states that in the process of involution or decay in the testicles of the aged, the intertubular connective tissue remains practically unaltered in the first stage, and even in the second it still remains of loose texture and contains, as in the normal state, many connective tissue cells.

Still it may be truly said that, up to the present, we are in ignorance as to the cause of hypertrophy of the prostrate.

It seems to be pretty well established that, in the great majority of cases, a degree of atrophy ensues after double castration. This atrophy seems to be chiefly in the glandular portion of the prostate. As the middle portion or the middle lobe, as it is sometimes called, is very largely glandular, it would be expected that this portion would undergo the greatest degree of atrophy. Such is generally found to be the case, but by no means always, as, at autopsies performed a considerable time after castration, the middle lobe has been found very much enlarged.

The following figures, taken from Cabot's table, show that seventy-nine cases survived the operation. In eighteen of these, the reports were not sufficiently explicit to enable one to form an opinion as to the functional result. We have left, then, sixty-one cases for our purpose.

Of these, five cases showed no improvement; one case improved at first and afterwards suffered a relapse. In four cases the catheter was still required, but entered more easily, and in these cases the sensibility of the bladder was markedly diminished.

In twenty-seven cases, retention, which existed at the time of operation, afterwards disappeared.

In the remaining twenty-four cases a decided improvement was reported, the gain showing itself in a diminution of pain and frequency and often a decrease in the amount of residual urine.

Reducing these facts to percentages, we find that these cases show 9·8 per cent. failure, 6·6 per cent moderate improvement, and 83·6 per cent. of substantial improvement.

There are remote results that must be borne in mind. There does not seem to be any degree of effeminacy following castration in old men as a rule. However, in ninety-nine cases, there were eleven of mental disturbance in the individual. A severe maniacal condition followed in six cases, and in five others some loss of mental balance, and in several a degree of melancholia. Of the six cases of mania, in one, signs of mania had been observed before operation. The administration of testicular fluid in these cases of mental disturbances has been followed by an improvement. The success of this agent has been sufficient to warrant its further trial.

The mortality following castration in old men has been considerable. Just what this rate is has been the subject of considerable discussion. As a matter of fact, 17 or 19 per cent. of the old men who have been castrated have died. Dr. White would eleminate a certain number of these on the ground that their death was not due to the operation, and, by so doing, bring the death rate down to about 7 per cent.

It is well known that old men suffering from prostatic hypertrophy are hazardous patients to touch with either a catheter or a knife or an anæsthetic. Only too often they are suffering from the secondary effects of vesical obstruction before they consult a surgeon. They often have unhealthy bladders, ureters and kidneys and are more or less toxæmic, and the mortality is, of necessity, considerable after whatever interference is adopted.

Resection of the vas deferens has been proposed by Mr. Reginald Harrison as a substitute for orchectomy and if it can be shown to give as good results, it should certainly receive the preference, as it is easily performed, and would be more readily accepted by the patient.

Just how vasectomy causes diminution in size of the prostate is a question requiring further elucidation. Some have thought that vasectomy caused atrophy of the testicles, and as a secondary result atrophy of the prostate. But in many of the recorded cases, there seemed to be an amelioration of symptoms without any appreciable sign of change in either the testicles or prostate. The evidence on this subject is very conflicting. Dicimus Hodgson says, "In persons who have been castrated, the prostate dwindles down almost to a radimentary condition." Birkett and Hilton record cases where the vas has been destroyed by injuries and the corresponding testicle atrophied.

Curling in his *Diseases of the Testicles* says, that the vas may be obliterated from birth, or may become so from injury or disease, without interfering with the health or development of the testicle. Griffith sums up the result of his observations on dogs by saying that ligature of the vas induces a slight enlargement of the epididymis and of the testicle, but does not in any way interfere with the stucture of the seminal tube or the production of spermatozoa. White, in his experiments upon dogs found that there were comparatively few changes in the testicles themselves. Alessandri got a different result, for he states that a short time after ligature, atrophy of the testicle and epididymis was produced. However, Mr. Harrison has performed single vasectomy in 12 cases, and seven appear to have derived permanent benefit from the operation, whilst in the remaining five the results were either negative, or it was found impossible to trace the patients subsequently.

Out of ten cases of double vasectomy, Mr. Harrison claims for five, great, and he believes, lasting benefit from the operation. Of the remaining five, two do not appear to have derived much advantage from it, two could not be traced, whilst the fifth is of too recent a date to be of use. That relief of the symptoms of prostatic enlargement follows double castration in a very large percentage of cases seems to be well established. How permanent this improvement will be found to be it is perhaps too soon to say.

That relief of symptoms follows double vasectomy in many instances seems also clear, although the symptoms may subside more slowly than after orchectomy. The rate of mortality after orchectomy and vasectomy can only be improved by a more judicious selection of cases. Up to the present it has been 18 or 19 per cent. in orchectomy, and less after vasectomy.

Mr. Harrison suggests that in double vasectomy an interval of a month be allowed to elapse between the operations. His method of operating is very simple. He draws a loop of the vas out of a small wound and puts a ligature around it, cutting off the distal part. In this way he ensures against a reunion of the ends. It might be well to adopt this suggestion in double castration, allowing an interval of a month to elapse before the second testicle is removed. Some comparison has been made between the mortality rate in orchectomy and in prostatectomy. In the latter, the rate of mortality has been about 20 per cent. or over. It is a question worth careful study, whether or not the technique of prostatectomy cannot be so improved as to materially lessen the danger. Suprapubic prostatectomy has the advantage of permitting a careful examination to be made of the vesical prostate, and the determination of the part that is causing the obstruction to the outflow of the urine, as well as the removal of calculi, if present, and an examination of the bladder and drainage.

If this could be made a reasonably safe operation, it is free from many of the objections raised by patients against the loss of the testicles, and assent to prostatectomy could be obtained much earlier and more readily than to castration. While there can be no doubt castration and vasectomy enable us to give relief to many patients, yet consent to such a mutilation can only be obtained under great stress of circumstances, and for this reason it may be predicted that the mortality rate will remain high. It must be admitted that we have not as yet any remedy, medical or surgical, that we can safely advise in an early stage of the disease.

Geo. E Armstrong,

Canadian Medical Literature.

UNDER THE CHARGE OF KENNETH CAMERON.

[The editors will be glad to receive any reprints, monographs, etc., by Canadian writers, on medical or allied subjects (including Canadian work published in other countries) for notice in this department of the JOURNAL. Such reprints should preferably be addressed to Dr. Kenneth Cameron 903 Dorchester street, Montreal.]

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JANUARY, 1897.

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Hæmoptysis—J. M. Cotton, Lambton Mills, Ont., p. 1.
The operation for cleft palate—G. R. McDonagh, Toronto, p. 8.

THE CANADIAN MEDICAL REVIEW.

The physiology of nervous exhaustion—D. Campbell Meyers, Toronto, p. 1.
Cases illustrating the cure of epilepsy and chorea by the relief of eye-strain —G. Sterling Ryerson, Toronto, p. 5.

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The operative treatment of mammary carcinoma—George T. McKeough, Chatham, Ont., p. 1.
Two cases of slow pulse—P. A. Dewar, Essex. p. 6.

THE CANADA LANCET.

Two interesting cases of ectopic gestation—Norman Allan, Toronto, p. 219.
Oral and nasal breathing, with exhibition of patients—Price-Brown, Toronto, p. 222.

CANADA MEDICAL RECORD.

Nursing the insane—J. V. Anglin, Montreal, p. 177.
Afebrile typhoid fever—Robert Wilson, Montreal, p. 194.
Peculiar temperature in a parturiant—Robert Wilson, Montreal, p. 196.

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Chronic inflammation of the bladder and its treatment—J. F. W. Ross, Toronto, Ont., p. 25.
Diphtheria and its treatment—Alex. Taylor, Goderich, Ont., p. 29.

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Slight and serious eye troubles—J. R. McIntosh, St. John, N.B., p. 1.
Twin labour, complicated by hour-glass contraction—C. H. Morris, Middle Musquodoboit, N.S., p. 11.
Cases of fibroma of the nasal passage and naso-pharynx—N. E. McKay, Halifax, N.S., p. 15.

L'UNION MÉDICALE DU CANADA.

Les aliénés devant la loi : responsibilité légale des aliénés—Georges Villeneuve, Montréal, p. 5.
Les cocaïne en chirurgie—O. F. Mercier, Montréal, p. 20.

LA CLINIQUE.

No original articles.

FEBRUARY, 1897.

THE CANADIAN MEDICAL REVIEW.

Clinical notes on hysterectomy for large fibroids—J. F. W. Ross, Toronto, p. 39.

THE CANADA LANCET.

A case of typhoid fever with unusual nervous symptoms—J. T. Fotheringham, Toronto, p. 272.

Clinical notes on a case of apoplexy—A. J. Harrington, Toronto, p. 273.

THE CANADIAN JOURNAL OF MEDICINE AND SURGERY.

Notes on the symptomatology and diagnosis of sensory, motor or trophic paralysis, consecutive to lesions of contiguous parts, resulting from violence—Thomas H. Manley, New York, p. 19.

REPORTS, &c.

Second Annual Report of the Board of Health of the Province of Quebec, for the year ending June 30th, 1896.

On Hæmorrhagic Cysts of the Thyroid Gland---W. I. Bradley.

These investigations have been extensively quoted and commented upon by Dr. Archibald in a paper on the same subject, which will appear later.

Cases Illustrating the Cure of Epilepsy and Chorea by the Relief of Eye-strain---G. Stirling Ryerson.

The writer affirms that in all cases suffering from chorea and epilepsy, heterophoria is an element which must be eliminated in making a prognosis and in prescribing treatment. It is generally admitted that headache frequently arises from errors of refraction and from muscular insufficiencies. It is only going a step further to admit that the severer manifestations of nerve disorder unattended by gross lesions may be caused by the same source of irritation. The first case was a man, aged 25, who suffered from headache on the top of and at the back of the head, dizziness, loss of memory, and at times loss of consciousness. He also complained of pain across the back and at the angle of the scapula. General treatment had been without benefit. The patient was found to be suffering from hyperphoria and esophoria with much weakness of vision. The right superior rectus was tenotomized, followed shortly with complete relief of the symptoms. A year later the patient still retained good health. The second case was a young woman, who suffered from severe headaches in the occiput and pain in the nape of the neck. She had also marked chorea, which was bi-lateral and affected the whole body. Vision $\frac{15}{20}$, with $3\frac{1}{2}$° right hyperphoria. Partial tenotomy of the right superior rectus was performed, followed by recovery.

The writer stated that in his opinion 2°, at least, was necessary to justify operative interference, and no decision should be arrived at until after two or three examinations on as many days, because while on one day a large defect is registered, on the next it has disappeared

Second Annual Report of the Board of Health of the Province of Quebec.

This report contains the record of the large amount of valuable work done by this energetic Board. There has been obtained from the Legislature a revision of the law on interments and disinterments, which enabled the Board to modify a great many provisions, which were either contrary to hygiene or, at least, insufficient for the protection of public health. Though there has been no epidemic of contagious diseases, a great many cases have been reported. Of the 4,729 cases there were diphtheria 2,294, scarlatina 942, typhoid fever 850, measles 641, and smallpox 1. These figures are far from stating the whole truth, for it is estimated that 63 per cent. of the cases occurring were not reported to the Board.

The report of the Bacteriologist contains much valuable information upon disinfection by formaline (quoted in the JOURNAL, February, p. 652) and the diphtheria diagnosis. Concerning the latter he has reached the following conclusions :

1. The culture method enables a positive diagnosis to be made in 90 per cent. of all cases of diphtheria when seen early.

2. The significance attaching to a negative result depends entirely upon the length of time which has elapsed since the onset of the disease, and the absence of bacilli from a case which has lasted often four or five days does not prove that it is not diphtheria : in any case where the course of the disease made it likely to be diphtheria, repeated re-examination is made.

3. In severe cases of suspicious angina, it is advisable not to delay the preliminary dose of antitoxin in order to learn the result of the bacteriological examination.

4. The greatest value of the bacteriological examination is in determining the necessity and the duration of isolation and quarantine, and if cases continue to appear, the throats of all persons exposed to contagion should be examined whether they show signs of disease or not. A swabbing to be taken post-mortem in all cases of death from croup.

5. The patients should not be released from quarantine, and the final disinfection of the premises should not be done until the bacilli have disappeared entirely from the affected part.

6. The bacilli have been shown to infect articles of clothing, furniture, etc., and these should be thoroughly disinfected, preferably by steam under pressure, and solutions of mercuric chloride. Fumigation by sulphur is unreliable in the majority of cases as commonly carried out.

7. Cases showing a heavy growth of bacilli, on serum at 20 hours, not quite of the Klebs-Lœffler type, should be regarded as suspicious and strictly isolated until their non-diphtherial nature is clear. In order to avoid the conflict between the opinions of the medical attendant and the bacteriologist, it is preferable, when a case diagnosed clinically as non-diphtheritic shows a growth of bacilli, that the further tests of acid production and pathogenes are to be applied, the medical attendant being informed of the suspicious nature of the case and of the necessity of isolation pending more thorough bacteriological study. This would remove a common cause of friction between the medical attendant and the Health Officer, and lead to the more careful study of the doubtful cases.

8. In spite of the use of antitoxin and the great benefits resulting from it, the mortality of diphtheria has greatly increased in Montreal during the past year.

The study of the demographic movement in the Province gives the following results : Birth rate, 39.30 per 1000 inhabitants ; marriage rate, 32.76 per 1000 persons of marriagable age, or who were not married ; death rate, 21.24 per 1000 inhabitants ; 20.46 per 1000 inhabitants (omitting still births).

The proverbial prolificness of the French-Canadian race enables them to occupy a very remarkable position. In the 35 counties where the population is almost exclusively of that nationality, the birth rate assumed the remarkable proportion of 44 per 1000, while in the County of Yamaska it had reached 60 per 1000.

Details of deaths are given as to ages, causes and the counties wherein they occurred.

Canadian Medical Journalism.

With the new year, changes have occurred on the editorial staffs and in the general appearance of several of the Canadian journals. The representative of the Maritime Provinces has been enlarged, is printed on better paper, and contains several interesting articles, as well as the proceedings of the various societies that meet in that part of the country. In Toronto, a new publication, *The Canadian Journal of Medicine and Surgery*, has appeared, making the fifth published in that city. The reasons for its existence are not apparent, the editors having offered no explanation, except that they signify their intention " to devote their energies to the task of bringing out a helpful, and, withal, bright and readable monthly—a digest of some of the best articles in foreign medical journals and an open field for the original articles of Canadian physicians." The selections are well made, the arrangement is good and the printing is excellent. It is noticeable, however, in the first number, that though the editors promise "to carry on the *Journal* in accordance with the ethical principles which characterize the proceedings of reputable physicians," there is, in the middle (p. 33), a full page advertisement of a mineral water, and two pages, of what purports to be editorial, are devoted to the same commercial article. In the second number these objectionable features have been eliminated, for which the editors, no doubt, will receive the cordial approval of the profession. While such notes as this may not be strictly a violation of the code, it is very suggestive, that editors have placed their pages at the disposal of the advertiser, instead of confining that enterprising individual to his special department at the beginning or end of the number. In no way is the endeavour of the publishers and editors of most of our journals, to raise the standard of their magazine, more in evidence, than in the gradual disappearance of that form of journalistic depravity—the reading notice. Two, however, of the journals still pursue their evil way, and one is particularly guilty in this respect. Not satisfied with the paid-for notes and testimonials of proprietary medicines from unknown practitioners, they now inflict upon their readers offers of supply of legal advice of a questionable character. At the end of the section devoted to gynæcology and obstetrics appears the following: "Sue for your divorce in the United States. ———, Attorney-at-Law and Solicitors in Chancery, —— Chamber of Commerce, ———, ———." (Names omitted for obvious reasons.) If this is intended for wit, it is a failure, if simply as an advertisement, it is a disgrace.

Kenneth Cameron.

Reviews and Notices of Books.

Food in Health and Disease. By J. Burney Yeo, M.D., F.R.C.P., Professor of Clinical Therapeutics in King's College, London, &c. With illustrations. New and revised edition. Philadelphia: Lea Brothers & Co.

We are pleased to see a new and revised edition of Dr. Yeo's useful manual on food. The work is one which has met with great favour. In the revised edition much new matter has been added, including a chapter on the sterilization of milk. J. S.

Current from the Main. By W. S. Hedley, M.D. Pages, 34. H. K. Lewis, London.

This little book consists chiefly of articles published in *The Lancet* in December, 1891, and April, 1892. After briefly discussing in the first chapter the obvious risks in using the current from the main due to leakage and to breakdown of transformers, and showing that fuses and cut-outs are not a very satisfactory safeguard, the author proceeds to recommend the usual devices of the "shunt or potentiometer rheostat" and the "motor-dynamo" as the safest and most convenient means of reducing the electric pressure within limits suitable for therapeutic purposes. The pages are full of technical terms, indicated by inverted commas, and appear to be offered to specialists as "a complete survey of the whole problem," for which the time is said to have arrived. The book is all too short to be intelligible except to the expert electrician, and we fear that the current from the main must still remain a possible source of danger in the hands of the average M.D., unless he is content to take a practical course under some competent instructor. H. L. C.

A Handbook of Surface Anatomy and Landmarks. By Bertram C. A. Windle, D.S.C., M.D., M.A., Professor of Anatomy in Mason College, Birmingham, &c. Second edition, revised in collaboration with F. Manners-Smith, M.A., M.R.C.S., Lecturer on Osteology and Senior Demonstrator of Anatomy, Mason College, Birmingham. London. H. K. Lewis, 1896.

Into the small space of 143 pages is crowded a great deal of very valuable information, and the carefully drawn diagrams (some of them beautifully coloured) show, at a glance, the exact position of the most important internal organs. In addition to the strictly anatomical details, there are many useful hints given as to the performance of the simpler surgical operations, which render the work useful to the general practitioner, as well as to the senior student, for whom it is more especially designed.

Each chapter takes up, and finishes, a certain part of the body, and therefore any information is easily obtainable even without reference to the full and excellent index. The book should prove of great service to the students of clinical surgery and medicine, and the busy general practitioner may often quickly get there the information he wants. The price puts this little work within the reach of every student.

J. M. E.

Voice Building and Tone Placing. By H. Holbrook Curtis, Ph.D., M.D. New York, D. Appleton & Co., 1896.

This work is divided into chapters, under which are considered the origin of music, the anatomy and physiology of the larynx, the subject of respiration, the vocal resonators, tones and over-tones, the registers of the human voice, tone placing, voice building, and, finally, voice figures.

Under the chapter on respiration, the various methods used are criticised, and the one advocated by the writer is ably defended. On the subject of tone placing, the writer brings forcibly to the front the ill effects of imperfect focussing of tone, causing, in reality, the greater number of the difficulties experienced by singers in producing pure tones, and other symptoms which prevent the keeping of the voice in all pureness and sweetness. One symptom, which is the *bête noire* of singers, is the presence of the so-called "singers' nodules," and the author shows how they are produced and how they may be removed by properly graduated vocal exercises carried out in a correct manner. This is indeed a great advance in the usual method of treating such cases by the use of applications made directly to the vocal cords, and the writer is to be heartily congratulated upon bringing such a work as he has here prepared before the public, and the work certainly should be in the hands of all teachers of singing, as well as the laryngologist. The book is well illustrated by numerous diagrams and the printing is done in the manner so characteristic of the publishers. H. S. B.

The Principles of Theoretical Chemistry with special reference to the Constitution of Chemical Compounds. By Ira Remsen, Professor of Chemistry in the Johns Hopkins University. Fifth edition; thoroughly revised. Lea Brothers & Co., Philadelphia and New York.

The object of this little volume as stated in the preface is "to help students to get clear ideas in regard to the foundations of chemistry" and to serve as a "brief treatise on those facts and speculations that have to deal especially with the problem of the constitution of chemical compounds."

The book may be considered as divided into two parts, the first dealing with the atomic and molecular hypotheses and the second with the constitution of compounds. The first part opens with a discussion of the combining numbers and atomic weights of the elements, a brief description of the methods employed in the determination of these quantities, and an outline of the historical ideas connected therewith and culminating in the atomic theory. Following this the development of the molecular theory, due largely to the labours of Gay Lussac and Avogadro, is traced. To this is added a short, clearly written chapter on the very important subject of solutions, the study of which has within the last decade brought about a small revolution in many of our fundamental ideas; and a chapter on solids with special reference to their specific and molecular heats, and a short reference to isomorphism as furnishing a means of determining atomic weights. This part of the book is then appropriately closed by a chapter on the Periodic Law, presenting the atomic weights of the various elements in their relations to one another and pointing out the fact that the general properties of the elements appear as periodic functions of their atomic weights.

A chapter on valency forms the connecting link between the first part of the book and the second, which deals with the constitution of chemical compounds. In this part the division of compounds into classes is described and then follows a thorough study of the constitution of the principal groups of organic compounds, with a chapter on the application of physical methods to the problems of constitution, and a chapter on chemical affinity. The second half is also brought to a suitable conclusion by a chapter on the relations between the constitution of compounds and their properties.

The whole book is written in Mr. Remsen's lucid style, and is to be highly recommended to all those who wish to obtain a good elementary knowledge of theoretical chemistry. N. N. E.

Society Proceedings.

MONTREAL MEDICO-CHIRURGICAL SOCIETY.

Stated Meeting, December 18th, 1896.

GEORGE WILKINS, M.D., PRESIDENT, IN THE CHAIR.

Dysmenorrhœa in Young Women.

Etiology and Symptomatology, by Dr. WM. GARDNER. (See page 681.)

Treatment, by Dr. F. A. L. LOCKHART. (See page 690.)

Discussion.

Dr. A. LAPTHORN SMITH said that all must recognise the fact that dysmenorrhœa was not a disease, but rather a symptom of many and varied pathological conditions, and the treatment, therefore, would depend entirely upon the diagnosis. He found, on looking up his records, that it was an extremely common symptom, almost one-fourth of his patients having complained of it. The order of frequency had been as follows: greatest, in unmarried girls; next, in childless married women; then, in women with scanty flow at the periods, who had borne one child; and lastly, in married women who had borne several children and had prolonged and excessive menstruation. The reason of this was, partly because one met with more cases of stenosis of the os uteri in unmarried women, and partly because of a little of the general pelvic congestion occurring at one period often remained over to the next, and this was added to, at each successive period, hence, little by little, the external layers of the ovary became thickened. and the mucous lining of the uterus swollen and blocking up the canal. He thought pregnancy might be called nature's remedy for dysmenorrhœa because it both dilated the uterine canal and gave the ovaries a more or less complete rest, but that married life without pregnancy often made it worse.

Of the class who have borne one child but still suffer, the cause would be found, on examination, to have been an acquired, acute septic, or gonorrhœal endometritis, which had subsequently become chronic, leaving the mucous membrane of the cervical canal swollen with distended glands.

Of the fourth and smallest class, the cause would generally be found to be some form of displacement of the uterus, usually a backward one which seriously interfered with the circulation of the organ. Besides these four large classes, many scattered cases were found in which the pain was due, either to fibroid tumours blocking up the internal os, or to closure of either one or both ends of the Fallopian tubes.

Speaking of the treatment of that form due to stenosis, Dr. Smith recommended : (1) Improvement of the uterine circulation by curing constipation, the use of iron, strychnine, and phosphoric acid, and general hygienic measures ; and by these measures he claimed to have cured one-half of his cases. (2) Relief of the spasmodic contraction of the sphincter of the internal os ; here, acetanilide in doses of ten grains three times a day administered in strong coffee or weak whiskey, or combined with citrate of caffeine had given him the best results. Another drug that might be used was viburnum. He unqualifiedly condemned the use of opium and alcohol. A hot sitz bath was also of use. Where these measures had failed, the introduction of the negative pole of the galvanic current within the uterus was most effective. It was indeed marvellous to see how readily a sound would glide into the uterus, as the negative wire touched it, when that same sound could not be made to enter previously, even by force. In the majority, the second or third period after the treatment was painless, unless disease of the appendages was present. And where electrical treatment was not obtainable, rapid dilatation under anæsthesia with aseptic precautions, came next in value. At the same time the mucous membrane of the uterus should be curetted, and equal parts of Churchhill's iodine and carbolic acid applied to its surface. Where no improvement followed, there should be at least one repetition, and the cervix if elongated, amputated. He condemned the use of dilators in office practice.

In the event of all these measures failing, abdominal section would probably reveal the tubes bound down with adhesions and the extremities closed, and a small percentage of cases would thus require extirpation of the appendages for relief.

Dr. F. W. CAMPBELL alluded to the fact that the term "dysmenorrhœa" is being replaced by the modern synonym "painful menstruation," although in but few the function was entirely painless. In his experience the seat of the pain was in the pelvic region, back, loins, and inside of the thighs ; and during the flow the expulsive efforts were often as marked as during labour.

He had met with, not only all the varieties described by Dr. Gardner, but also another which was only described by a few authors, as ovarian dysmenorrhœa. It was not possible to draw the line between these absolutely, as some cases seemed to possess charactertics of two or more.

While he believed that many cases, perhaps the majority, would reach the office of the gynæcologist, yet he could see no reason why the general practitioner should not treat such cases with marked benefit to themselves and to his own satisfaction. He felt that he had been able to relieve the great bulk of his patients by medicinal treatment, and that failure had been mostly in the mechanical variety, where subsequently the knife of the surgeon had been required to produce relief.

In discussing the drugs used, he unqualifiedly condemned both opium and its derivatives, as tending to produce the opium habit, and the administration of gin or any kind of liquor. Many a bright life had been blasted by the liquor taken in the first place for the relief of menstrual pain. In the congestive form, he recommended the administration of some of the coal tar derivatives and viburnum. For the neuralgic variety, he thought general treatment most important with potassium bromide in half drachm doses three times a day at the period. Membranous cases he invariably handed over to the gynæcologist and in the ovarian variety, tincture of conium twenty minims three times a day, with the application over the ovarian region of equal parts of extract of opium, extract of belladonna, and iodide of lead.

Dr. D. J. EVANS did not agree with Dr. Smith in considering pregnancy nature's cure for dysmenorrhœa, and cited several cases in support of his opinion.

Dr. J. C. WEBSTER stated that he would limit his remarks to some statements regarding the treatment of dysmenorrhœa in general, which would supplement Dr. Lockhart's paper, and be a sequel to Dr. Gardner's.

The latter speaker had pointed out that dysmenorrhœa often occurred in cases of slight or non-recognizable pelvic lesion. These were instances of disturbed innervation in one or other of its various manifestations. Notwithstanding the great increase in neuroses among women during the present generation, it must be confessed, that in the gynæcological world, scant attention had been paid to them. When we remember the great disturbances which mark the advent and departure of the reproductive era of a woman's life ; the profound changes taking place during ovulation, menstruation, pregnancy, labour, and lactation ; the subtle and complex activities of her psychical life in her various diastaltic functions ; it is not remarkable that neuroses should manifest themselves, particularly in relation to her reproductive mechanism. That they are increasing, *pari passu* with the advance in our higher civilization, cannot be denied. Among the poor, the inducing factors were overwork, overworry, ill-regulated and poor nutrition; among the well-to-do, educational strain, over-indulgence, the stress of life, and emotional excitement.

Another important factor in explaining the prominent part which the pelvic organs play in the neuroses, is the widespread habit among women of centralising their attention upon these organs, because they are led to regard them as the primary cause of most of their ills. There is a fascination in the mystery of the sexual mechanism, and a morbid introspectiveness is easily engendered by an undue attention to it, too often passing into a condition of hypochondria. This mischevious habit is due, also, partly to the influence of the narrow mechanical school of gynæcologists; partly to the work of quack pamphleteers and vendors of patent medicines—would-be saviours of suffering womankind.

Owing to the marked surgical trend in gynæcological practice during the last twenty years, a narrow and debased specialism has been evolved which has resulted in the establishment of a school whose motto is "*Le bassin c'est la femme*," and whose remedial measures are limited to various procedures—from the passing of a sound to the extirpation of the appendages. Too strong a protest cannot be urged against the centralisation of attention on the local condition without regard to wider physical and psychical relationships.

The accusation of the broad-minded general physician, that the gynæcologist works in ignorance of the neuropathies and organic diatheses in that region of the body where they are of chief importance, is a well-merited one, and the majority of gynæcologists will, if they be honest, acknowledge its force.

In considering a case of pelvic pain we must bear in mind the following points:—

1. The pain may be directly due to pelvic lesions sufficient in themselves to produce this symptom.

2. Pain may exist with minor degrees of pelvic trouble, insufficient in themselves to cause more than a small amount of suffering.

3. Pain may be a pelvic symptom in association with some condition which in itself cannot directly produce this symptom.

4. It may be a prominent symptom in cases in which no local changes of any kind can be made out.

It is, therefore, very evident that other than local factors must be taken into count as explanatory of the symptom which we are considering. Among these, attention should be directed most markedly to the neuropathic condition—neurosis, in the widest meaning of the word.

This condition is related to the pelvis in various ways. In one set of cases, a local lesion, capable or not in itself of causing pain, may be the primary cause of development of a neurotic state manifested by diverse phenomena. The more marked these become the more is the pelvic pain intensified—a reactionary exhibition of the neurosis, as it were, on the seat of the primary affection.

In another class of cases there may be a slight pelvic lesion, causing very little discomfort. A neurotic condition may be developed from causes foreign to the pelvis, and this may manifest itself in intense pain, related by the patient to the pelvic lesion.

In another set the symptom of pelvic pain is developed as one of the phenomena of a wide-spread neuropathic state, there being no local lesion of any kind.

There is another interesting class in which the local symptom is practically the only neurotic feature in the patient. In some of these cases the condition is somewhat like that in which the possession of a "fixed idea" is characteristic.

In others it is of the nature of a "secondary reflex action" induced by a former continuity of habit when there was an actual painful local lesion which has since been cured. The patient's nervous system has so registered the former habit that it is reproduced apart from all control of the higher centres.

In the treatment of dysmenorrhœa, the failure to consider the existence of relationships between local and general conditions, between pelvic suffering due to and commensurate with pelvic lesion, and that which is due to neuroses, and the fixation of attention upon the local state, have resulted in a form of practice very often fraught with disappointment both to physician and patient.

The mechanically-minded specialist on coming into contact with his dysmenorrhœa case, at once proceeds to establish *a locus standi* in the pelvis. He argues thus: The patient complains of pain in the pelvis. It must be there. Its cause is there; its treatment must be by measures directed to the pelvis. He then has a choice of procedures. Probably he thinks first of a uterine flexion, and a pessary may be brought into requisition; or he may diagnose a stenosis of the cervical canal and proceed to a dilatation or to a cutting operation: or he may deem the ovaries at fault and decide heroically on their removal.

It may be that he will carry out these different operations *seriatim* in the chance that he will at last hit upon one which will be successful. Sometimes he cures his patient; sometimes he does not. When he is successful, he attributes the good result directly to his operation, forgetting that very often the benefit is obtained either through its indirect effect on her nervous system or by the influence of the rest, change of scene, diet, etc., with which her operative treatment is accompanied.

The history of gynæcology is one of a succession of periods of concentrated attention on one after another of the pelvic contents Before the days of the bimanual examination, when every gynæcologist wielded the tubular speculum, the supposed great source of pelvic trouble was the so-called "ulceration of the cervix," and there are well-founded traditions of fabulous fortunes made by those who devoted their lives to the touching of these diseased spots with various applications. Then, with the discovery of the uterus, came the period of displacements and contractures, when nature's mistakes were remedied by pessaries, dilators and scissors. Then the era of the ovaries, and, finally that of the tubes.

Now, at the end of the chapter, what can the *fin de siécle* gynæcologist do but practise upon the whole gamut of his predecessors, giving special attention to one organ or another according to his particular bent or predilection, and so we find the country getting filled with women nursing a grievance against their wombs, their ovaries or their tubes; in many instances possessing diagrams of their pelvic topography furnished by their zealous gynæcological physician, in order, it may be supposed, that they may, in their leisure hours, exercise their already over-stimulated introspective faculty with more scientific accuracy.

Who that has read Clifford Albutt's lectures on visceral neuroses has not smiled at his account of the woman "entangled in the net of the gynæcologist, who finds her uterus, like her nose, perhaps, a little on one side, or again, like that organ, running a little, or as flabby as her biceps, so that the unhappy viscus is impaled upon a stem, or perched upon a prop, or is painted with carbolic acid every week in the year except during the long vacation when the gynæcologist is grouse shooting, or salmon fishing, or leading the fashion in the Upper Engadine?"

Should the gynæcologist's moral sense become blunted, it is not difficult to understand why he may fall into the reprehensible habit of trading on the fears which naturally fill the minds of women when their reproductive apparatus is out of order, and of elevating into an unnecessary importance, conditions which are but trifling.

He trusted his words would not be misunderstood. He did not denounce local and operative measures. In their place they were essential. He only denounced their irrational and injudicious employment. All are subject to this temptation. All desire short cuts to success. All are prone to try like Clifford Albutt's *bête noir*, "to stem the tides of general and diathetic maladies with little Partington-mops of cotton-wool on the ends of little sticks." It is much less troublesome to make a few cuts than patiently to analyse a subtle and puzzling case and to exert our whole energy in overcoming an obstreperous or aberrant nervous system. Yet it is this latter practice that must be our constant study in many cases where pelvic pain and discomfort are prominent symptoms.

Throughout the orthodox medical fraternities of the most advanced modern civilized countries, there has been a widespread distrust of all remedial measures of a distinctly tangible kind. This attitude has, no doubt, justly been developed in antithesis to the ridiculous pretensions of the mystics of dark ages in Europe.

We are taught to denounce with academic scorn, and rightly, too, in most cases, faith-healers, Christian scientists, hypnotists, religious miracle-workers, *et hoc genus omne.*

Yet it must be confessed that if a careful study of this interesting congerie of empirics be made, it will be found that amid their extravagant claims and sententious philosophies they have all been nursed upon one common germ-idea, viz., that the transcendant power in the human organism is mind, and that the effects of diseased conditions may be enormously modified by influences brought to bear upon the cortical centres, especially if the disturbances are due to neuropathic states.

It should, therefore, always be the aim of the physician, in addition to the means which he employs in toning up the general health by drugs, food, etc., and to the local measures which he adopts, to endeavour to impress upon the mind of the patient the necessity of taking her thoughts from the pelvic condition, teaching her self-control, encouraging her, removing from her anxiety and fear as to the gravity of her state, and impressing upon her the importance of counteracting every development of neuroses that may become manifest in her.

Dr. J. C. CAMERON thought that our duties in the way of the medicinal treatment of dysmenorrhœa were not likely to be neglected, but that we were more liable to forget our duty in the line of prevention. Preventive medicine was the medicine of the future; the prevention of malnutrition and nerve strain in youth was the true one for dysmenorrhœa. We do not realize this when we allow the strength of growing girls to be overtaxed and their nervous system to be overstimulated by study and excitement. The public would never learn these things except from the profession, and yet we did not seem to realize our responsibilities in this respect. We should raise our voices persistently against those modern methods of education and training which undermine the strength and impair the usefulness of modern men and women.

Dr. **Wesley Mills** was pleased to hear from Dr. Gardner that the clinician could not agree with the view that there was no connection between ovulation and menstruation. This view could not be held by any person who was an observer of nature. It illustrated a very grave danger to the profession, that of proceeding to general principles from very special cases. Because, in certain diseased human females, one could not always trace the connection between them, it was rash to conclude that the process of menstruation was not dependant upon the function of the other reproductive organs. He expected as a result of recent advances in the knowledge of the innervation of the regenerative organs, as worked out by the Cambridge school, that a sounder basis of treatment would follow. As all parts of the body were related we did not know what the general effect might be of the removal of any one organ. He suggested that the gynæcologists might make valuable observations in this line.

Dr. **Lockhart**, in reply, said he could not claim to have cured 50 per cent. of his cases by the use of drugs. With regard to the use of the stem pessary, it was always his practice, where it was required, to insert it at the time of the operation, and to remove it before the patient left her bed.

Those who object to the bicycle for women should remember that it might be a question of use or abuse. He considered it essential that the wheel should be carefully selected and proper directions given as to the amount of exercise to be taken. He objected strongly to the routine use of potassium bromide and conium, believing that the exhibition of sedatives would not effect a cure.

Dr. **Gardner** felt that he had not made himself clear with regard to the varieties of dysmenorrhœa ; the classes mentioned he intended to represent types, as a large proportion of the cases was complex.

He considered the neglect of mothers and guardians to inform their charges of the onset of menstruation was very common indeed, and was scarcely short of criminal. In his experience the English were much more guilty than the Americans in this respect.

As a method of treatment in the neurotic form he had had pronounced success from the prolonged administration of the hypophosphites of lime and soda given in doses of from one to two grains freely diluted after each meal. Phosphide of zinc had proved satisfactory in a few cases, in some instances after mechanical treatment had failed. Nutritives were of the greatest value, but he was a little more conservative with regard to the use of iron. In neurotic cases if suspended at the approach of, and during menstruation it was of value. Often, in the congestive form, it was injurious, the patient might gain in colour, but she would suffer more severely at the periods.

The treatment by electricity was sometimes followed by brilliant results, using the negative pole of the galvanic current for a few minutes with a weak current.

He thought there was something we did not understand about the influence of the introduction of sounds into the uterus on painful menstruation. Often, after having passed the sound for diagnostic purposes, perhaps three or four periods following would be free from pain. He cited the case of a patient who came once every four or five months for five years, simply to have the sound passed.

Hot baths he had used for a long time, and bromides he thought of some value. For a few days before the advent of the period, in some cases, he used the bromides and conium, while in the intervals he employed curative measures.

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BRITISH MEDICAL ASSOCIATION.

MONTREAL MEETING.

If the selection of various officers and readers of addresses before the Association, has taken longer time than had been expected, and if still we are not authorised to publish a list of those already appointed, this much may be said, that the policy pursued by the Local Executive Committee and the recent journey of Dr. Roddick to England. have already resulted in the production of a list of officers, the like of which has never been equalled at any previous meeting save possibly those which have been held in London itself. We are informed on the best authority that in section after section the recognised leaders, men whose names are familiar as household words to the profession, have gladly accepted the invitation to preside. This fact alone makes it certain that the meeting will be most memorable.

We are glad to note also that the profession in other portions of the empire is realising the importance of this, the first Colonial Meeting of the Association. Within this last week letters have been received from Australia, Barbadoes and Bermuda, indicating clearly that we in Montreal can count upon the presence and active co-operation of members from the Branches there. With regard to the profession in Canada, letters are being received each day from all parts expressing pleasure that Montreal is making of this a national and not a local meeting. Only at the moment of going to press we hear that a well-known and leading member of the profession in Winnipeg, has not only written his appreciation but has generously offered the sum of $100 towards the expenses of the meeting.

From the Secretaries of the Museum Sub-Committee we learn that there is already an active competition to secure the best places in the Exhibition. We may here state that no steps will be taken to allot the spaces for which tenders are invited until March 27th.

PULVIS ET UMBRA.

We shrewdly suspect that the ordinary sane individual forms his or her opinion upon the relative propriety of various modes of disposal of the dead by the exercise of the imagination, rather than by calm reasoning or an attempt to apply the dictates of religion; otherwise we cannot explain to ourselves why we, with the majority of mortals, continue to have a preference for ordinary burial. Viewed philosophically—aye, viewed with the truest reverence—it is a small matter what becomes of the encasing shell when the *imago* bursts therefrom and wings its flight away. That shell must inevitably vanish. Sooner or later, be it in the space of a few brief minutes or be it only after an odd thousand or two years, the lifeless body must become thin air and a mere handful of dust, and dust and air be blown to the four quarters of the heavens. Do what we will, hold we however firmly to whatever creed, however strong our conviction that once again this corruptible shall become the framework of the incorruptible, we must admit that by no human device can we overcome its corruptibility.

Fundamentally the views of the majority concerning the proper disposal of the dead resolve themselves into a matter of æsthetics, a matter not of what is best for the community, but of what is most seemly to themselves; and what is most seemly is, as we say, essentially determined by the imagination. With most of us the final determination of the matter—if with most it be not the first and final—is based upon an attempt, as grimly humorous as it is pathetic, to strive to appreciate the comfort of coffined dissolution *à la mode*, as compared with the swifter dissolution within the furnace. We cannot divest ourselves of the idea that this familiar body of ours is our very self, cannot help picturing it as still sentient after death, cannot contrast the relative advantages—or rather, disadvantages—of the furnace and the grave without in the one case a painfully keen anticipation of the agony to be endured in the process of being burnt, while, regarding the other, we are the slaves of custom and view with relative indifference the inevitable happenings underground, the uncleanly horrors of putrefaction (to use the mildest of language). Let the earth be shovelled in, and the tombstone cover everything. That is enough for us.

Like unto healthy people in general, we, of the editorial staff, are not given to contemplate this matter of the *omne quod superest*. As individual members of the community, we do not by any means represent ourselves as active advocates of cremation. What we here take to be the general view of the subject may—so little have we thought about it in the past—be equally taken to indicate our own æsthetic proclivities. We do not think that the time has come for cremation to be adopted as a general means for the disposal of the dead, nor are we prepared to urge it upon the community. But if we be asked whether it be reasonable, we, as medical men, must admit that it is—nay, more, must acknowledge that there is no more perfect way of disposing of the dead. Indeed, from a hygienic standpoint, it is abundantly evident that there is little or nothing to be said in favour of the consignment of earth to earth, as usually conducted, while cremation, as now carried out, fulfils every hygienic requisite We do not attach much weight to the objection that the crematorium will help to defeat the ends of justice. Those who favour cremation can have no objection to the performance of autopsies. For years to come cremation must be regarded as a luxury, and will be paid for accordingly, so that no hardship will be imposed in demanding a preliminary autopsy whensoever the crematorium is called into use.

We trust that we have made it clear that we are at one with those who shrink from being consigned, and from consigning those near and dear to them, to the action of fire, purifying and cleanly though that action must be. But we cannot see a solitary satisfactory objection to permitting those who so desire to be cremated. No valid reason can be brought against the erection of a crematorium in this immediate neighbourhood. If such be erected, it is not proposed to cremate therein the members of the Board of the Mount Royal Cemetery, save at their express desire. The sentiment which of late led a majority of those present at the annual meeting of that Board to oppose the erection, can only be described as mediæval. Surely the time has passed when one section of the community can deny to a minority of the same—a minority which, nevertheless, contains some of the greatest philanthropists and most highly respected men in Montreal—the privilege of disposing, in a strictly legitimate manner, of that which

"the soul
Hath broken and cast away."

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Original Communications.

THE BIOLOGICAL BASIS OF MENSTRUATION.[1]

BY

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At the present time there is universal ignorance as regards the causation of menstruation, its meaning as a sexual character, and the method by which it has become established among the higher mammalians.

The following views have been advanced to explain the meaning of the process :

1. *Relation to Ovulation.*—For a long time it has been believed that ovulation and menstruation are so closely related that they occur at or about the same time, the former being the cause of the latter.

Of those who hold this view, some think that the blood-discharge results from a general pelvic congestion, supposed to be present during the ripening and escape of the ovum. Thus, Mathews Duncan often compared the menstrual flow to the red flag outside the door of an auction-room, which indicates that something is taking place inside.

Others regard menstruation as a process induced by ovulation necessary to the preparation and development of the ovum, in case it should be fertilized.

A careful examination of the evidence on which these statements are founded reveals their untrustworthiness. It is, indeed, a wonder that they have so long been believed.

The following facts relating to maturation and escape of the ovum are now definitely ascertained. These processes are usually in operation some time prior to the development of the phenomena of puberty before menstruation appears ; sometimes they occur in childhood and in fœtal life. There is no proof at all that pelvic congestion takes place either coincident with or secondary to these processes, at any time in a woman's life.

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[1] Read before the Montreal Medico-Chirurgical Society, Jany. 12th, 1897, and before the New York Academy of Medicine.

Ovulation may also occur without menstruation in the dodging-period of puberty and of the menopause; for several years after the menopause as Hegar has pointed out; during lactation; in certain diseased conditions, *e.g.*, anaemia, phthisis, lead-poisoning. Pregnancy may take place at any of these times. DeSinéty describes an interesting case which he examined, of a woman, 38 years ot age, who had never menstruated. In the ovaries there was the normal condition of Graafian follicles, and *corpora lutea* indicating that ovulation had taken place. The body of the uterus was undeveloped.

Then, in abdominal and *post-mortem* sections made at all times between menstrual periods, Graafian follicles may be found on the point of rupture or recently ruptured; and in examinations made during menstruation; no sign of ovulation may be visible.

(In this connection it is interesting to note that Heape examined the pelves of forty-two monkeys *(Semnopithecus entellus)* during their menstrual periods and found evidences of ovulation being in progress in only two cases.)

It is a common observation that extensive disease of both ovaries, *e.g.*, cystoma, suppuration, malignant growth, may not effect the menstrual function to any appreciable extent in many cases.

These various facts are sufficient, it seems to me, to overthrow the view that menstruation is a necessary accompaniment or sequel of ovulation.

Yet it can scarcely be denied that there is some relationship between the processes.

Removal of the ovaries is followed by cessation of menstruation though in a certain number of cases this does not happen. As an interesting instance of this, may be mentioned Lawson Tait's patient from whom both ovaries and tubes along with a part of the uterus were removed, menstruation still continuing.

These exceptions have been carefully considered by several authorities, lately by Bland Sutton. He states that the reported cases have been mostly those in which chronic inflammation in and around the appendages has been present, or those in which operation has been performed for myoma uteri. His explanation of the persistent menstruation is that either small bits of the ovary have been left behind, or that in the cases of myoma a submucous tumour may exist leading to hæmorrhages. Many cases have undoubtedly been recorded in which after removal of the ovaries for fibroid, menstruation has continued.

The long held view of supernumerary ovaries is discarded by Bland Sutton. He thinks that these so-called structures are merely small bits separated from the main mass of the ovary by deep fissures.

In several of these cases of unchecked menstruation, second operations have been performed by which small bits of ovary left from the first operation have been removed, being followed by a complete cessation.

2. *Relation to the Fallopian Tubes.*—According to Lawson Tait, removal of the tubes, the ovaries being left *in situ,* is followed in 95% of cases by cessation of menstruation. This remarkable statement has been little noticed. If it can be established by extended observations, it proves that there is some close relationship between the tubes and the menstrual process.

3. *Relation to a Special Nervous Mechanism.*—Johnstone has advanced the view, supported by Lawson Tait and others, that the menstrual act is a special function related to a distinct nervous mechanism. They think that possibly a special nerve trunk running in the upper part of the broad ligament may convey the regulating currents. Johnstone suggests that *when the ovaries or tubes are removed, menstruation is checked because this nerve is ligatured or divided.* In the cases in which removal of the appendages is not followed by cessation of the flow, he thinks that the nerve may have escaped division or ligature, owing possibly to its being placed low in the broad ligament.

While undoubtedly believing in this special nervous mechanism of menstruation it seems to me that possibly the nerve tract is not so limited as Johnstone suggests. The plexiform nature of the nerves about the uterus is so complex that it is presumable that the impulses affecting the mucosa of the uterine body travel by many routes in the broad ligaments.

4. *Relation of Menstruation to Conception.*—By some it is believed that menstruation is a process for preparing the uterine mucosa for the engrafting of the fertilized ovum, that it is in fact, an essential feature. This idea was promulgated when it was thought that the ovum required a connective tissue free from covering epithelium to become engrafted on. I have repeatedly urged its improbability on the following grounds :

a. In all mammalians below homo, so far as is known, the ovum grows in relation to the epithelium-covered uterine mucosa and does not require a connective-tissue surface. The uterine epithelium is undoubtedly non-essential, but it is destroyed by degenerative processes and by the trophoblastic action of the outermost layer of the fœtal epiblast. As far as our observations go in human development the same processes occur there.

b. Pregnancy may occur in a girl before the onset of menstruation, at a time therefore, when the mucosa cannot be denuded by that process.

c. It may occur during the lactation period, long after the uterine mucosa has been restored, and at a period in which menstruation is in abeyance.

d. It may take place in one of the periods of amenorrhœa during the progress of the menopause.

e. It may occur in periods of amenorrhœa due to diseases *e.g.*, anæmia, phthisis.

f. Clinical experience of cases of pregnancy following a single coitus proves that development of the ovum may begin at any time, not necessarily immediately after menstruation. (It must be stated that this evidence is of doubtful significance, owing to the uncertainty in our knowledge as to the time it takes the ovum to pass from the ovary down through the genital tract and as to how long the spermatozoa may live in the tract.)

g. Pregnancy may occur in the rudimentary horn of a malformed uterus, menstruation never having taken place in that horn.

(Whereas, as P. Müeller points out, there is no record of pregnancy having ever occurred in the horn of a bicornuate uterus which is atresic in its lower part; menstruation goes on in it, as we know, the blood accumulating above the atresia).

h. It may occur years after menstruation has ceased at the supposed menopause. An interesting example is Renaudin's case in which a woman of sixty-two was delivered though she had not menstruated for over ten years.

i. In male pseudo-hermaphrodites, possessing testes but no ovaries, the vagina, uterus and tubes may be present and menstruation may go on regularly or irregularly.

Another view is to the effect that, along with the maturation of the ovum, the endometrium swells as the first stage in the formation of a decidua which will receive the ovum if it be fertilized. If fertilization does not occur, breaking down of the superficial portion, the so-called "menstrual decidua" occurs, and the menstrual discharge takes place; in this way menstruation may be regarded as the expression of the failure of a process meant to be initial to pregnancy. For, if fertilization occurs, it is thought that the swollen mucosa advances to form the decidua of pregnancy.

This view, it is evident, is based upon a fallacious assumption, and my objection to the last mentioned theory may be quoted to refute it.

There is no proof whatever that changes in the mucosa accompany maturation of the ovum, and the best evidence we possess regarding the alteration in the uterine mucosa during menstruation, viz., the observations of Johnstone, Bland Sutton, Heape, Minot and Mendl goes to show that practically only blood and small portions of the lining epithelium escape. There is normally no exfoliation of a layer worthy the name " menstrual decidua."

I think this term is a bad one ; it is to be clearly understood that no change occurs in the connective tissue elements of the mucosa during menstruation, viz., enlargement of cells. This change only occurs in connection with the influence of a fertilized ovum.

Löwenthal has advanced still another explanation. He believes that menstrual bleeding is neither a physiological function nor an accompaniment of one, but that it is due to innumerable repetitions of an unnatural state of things, viz., the non-fertilization and death of the ovum. He says that the swelling of the uterine mucosa is the result of the embedding in it of the last ovum discharged from the ovary. If this ovum be fertilized the swelling mucosa goes on to form the decidua of pregnancy ; if no fertilization takes place, the ovum dies, and as a result of this death a breaking down occurs in the mucosa. He, therefore, regards the menstrual flow as having all the characteristics and effects of other bodily hæmorrhages.

Löwenthal's view is a piece of speculation without any factual basis. No one knows anything about the unfortunate ova which do not fulfil their highest destiny. It is a sympathetic imagination which makes them cling in their downward course to the walls of a repellant uterus, forcing changes upon that organ, in the fond hope that a wandering spermatozoa may cleave to it in consummative union.

Fanciful also the picture of death following bitter disappointment, the coincident decay of the dead ovum's resting place and the final bearing away in a blood-red funeral stream of the fragments of a once active individuality.

Johnstone believes that the simplest definition of menstruation is a periodic wasting away of the corpuscles that are too old to undergo the changes which must occur in connection with the attachment and development of the fertilized ovum. He does not regard the endometrium above the internal os as mucous membrane, but as belonging to adenoid tissue.

Menstruation is for it what the lymph stream is to the lymph-gland or the blood stream to the spleen. The development of the corpuscular elements, he thinks, takes place in the endometrium, as in the blood-glands, spleen, thyroid, etc.

The existence of menstruation in the human female and its absence in the mammalian orders below the Primates, he explains by postural differences, and by difference in the structure of the endometrium. From his studies he is of the opinion "that nature has supplied the endometrium with an abundant lymph stream, which in the unimpregnated state washes away the ripe material to the general circulation exactly as it does any other lymph corpuscle. But in woman, where, on account of its erect position, the uterus has to depend on the tenacity of its own fibres for the preservation of its shape, no such thing as loose tissue of a lymphatic network can be depended upon. So, to preserve the integrity of the uterine wall, the emulgent stream is poured into the cavity of the body, and got rid of through the vagina."

5. *Relation to Body Metabolism.*—Geddes and Thomson in their "Evolution of Sex" have advanced the theory that the menstrual process is related to the balancing of anabolism and katabolism in the female organism.

After puberty a surplus is produced in the system because the anabolic preponderates over the katabolic. When pregnancy occurs this excess is spent in the nutrition of the ovum during its parasitic intra-uterine life and during lactation. When these methods of using the anabolic surplus are wanting, menstrual losses occur in order that it may be got rid of.

Biological Considerations.—Scarcely any attention has been given to the consideration of menstruation in its biological aspects.

The speculation of the distinguished biologists, Geddes and Thomson, is one of the most suggestive which has yet been advanced, and it is worthy of an elaborate study.

The careful investigations of many forms of plant and animal life by zoologists and botanists, have enabled the biologist to establish a distinction between "maleness" and "femaleness" not only in terms of morphological characters but of psychological and physiological reactions. It is only recently, however, that sex differences have been investigated on these more subtle and difficult bases of inquiry. Too long have reproduction and sex been considered by themselves as if they were something to be disassociated from the general physiology of the organism.

The most important sex-distinction which has been established is that which has to do with the general metabolism, or protoplasmic chemistry of the body. Every living cell and every organism is continually representing two forms of metabolism: one, the anabolic, by which nutrition is taken in, waste repaired, energy stored, structure improved or altered; the other, the katabolic, by which potential is changed into kinetic energy and movement or activity manifested, structural alterations induced and waste created.

Throughout the animal kingdom the distinctive and predominant characteristics of the male sex is katabolism and of the females, anabolism.

Generally speaking, the males show activity, continual expenditure of energy, disruptive metabolism; the females, passivity, quiescence, constructive metabolism.

The same distinction is also found in the plant world. The lines of inquiry on which this generalization has been made are the following:

1. A study of sexual characteristics in the fully developed state and in the history of the individual.

2. An investigation into the condition of the lowest forms of animal and plant life, where sex has its beginning.

3. Observation of normal and pathological changes in the reproductive apparatus.

4. Experimental inquiry into the nature of the factors which determine sex.

Details regarding these lines of research are beyond the limits of this paper, yet some reference must be made to them.

As regards the differences found in the adult forms in the invertebrata and among fishes, it may be stated that in general the body temperature is lower in the female. (This is so in many plants). Their longevity is greater. They are in general larger and more sluggish in habits. The males expend energy more freely, thus preventing storage-accumulation and increase in size. Among birds and mammals, while the general metabolic differences exist the males are usually larger than the females owing to special factors which have come into operation and which do not exist in the lower orders of life. Darwin and Geddes have explained these. They show that the differences in size in the higher forms are mainly in bones and muscles. This is explained partly by the extra stress and strain thrown on the males while the females are in a state of pregnancy and caring for the young; partly by the strengthening effect of fights between the males, the strongest tending by natural selection to perpetuate their kind; partly by the effects on the female constitution of the excessive reproductive demands found among the higher animals.

The distinction between the sexes is universally marked in the spermatozoon and ovum, the former being small, active, energising katabolic; the latter large, passive, highly nourished, anabolic. While the metabolic differences between male and female have been mainly studied in plants and the lower animals, some work has also been done in the human subject, though here the difficulties are greater owing to the greater complexity of the organism.

Blood—The red corpuscles are more numerous in the male, and the percentage of hæmoglobin greater than in women. The specific gravity is the same until puberty. Afterwards it is higher in men than in women during the sexual life. In old age it is usually higher in women.

It is thus evident that the menstrual life is associated with a fall in the specific gravity of the blood.

Pulse rate.—The pulse rate is slower in men than women. This holds good for nearly all animals.

Respiration.—Men produce more carbonic acid than women as estimated by the breath. After puberty the amount is nearly double that produced by women. It increases in the latter during pregnancy and after the stoppage of menstruation.

Excretion..—The urine of women is usually lighter in colour than that of men, and its specific gravity lower. The amount of urinary solids is both absolutely and relatively less than in the case of men, especially during the reproductive era of her life.

It is highly probable that those features which we call secondary sexual characters, *e.g.*, richer pigmentation, excess of hairs and feathers, activity of scent glands, etc. which are found in the males are but the multiform expressions of the katabolic predominence in the male organism. And it is important to note that in the great run of cases these characters are fully developed as maturity is established. In early life there is practically no physiological distinction between the sexes. The establishment of the reproductive functions is associated with the development of sexual features, which, as Darwin has pointed out, modify the males to a much greater extent than the females, throughout almost the entire animal kingdom. "Generally," he states, "the female retains a closer resemblance to the young of her own species than to other adult members of the same group.'

Experimental evidence regarding the influence of various conditions in the production of sex, points also strongly towards the conclusion that "in the determination of sex, influences inducing katabolism tend to result in the production of males, as those favouring anabolism similarly increase the probability of females (Geddes and Thomson). Poor or abnormal food, deficient light, moisture, exercise, excessive lactation and other conditions tending to diminish the repair-supply or to cause a surplus of waste—the katabolic habit, tend, in experiments made on lower animals, to the production of males. Such tests strengthen the view that the male is the index of a preponderating katabolism, and the female of an equally marked anabolism.

Now, throughout the greater part of the animal kingdom, this anabolic predominance in the female affords the means of counteracting the katabolic influence of the part she has to play in reproduction.

During the sexual life of females among most of the Primates, the anabolic habit does not find sufficient employment in supplying this destructive influence. An overplus exhibits itself in the production of milk during the early period of the child's life, and, after lactation, in a discharge of blood from the uterus.

Cases of menstruation during lactation might by this theory be easily explained. The production of milk does not use up the anabolic surplus, which, therefore, becomes disposed of through the sexual menstrual outlet.

In all mammalians below the primates the balance is regulated without the occurrence of any loss through menstruation ; reproduction, lactation, the care of the offspring and their moving habits apparently making such demands upon the maternal anabolism that no surplus corresponding to the menstrual blood of the human female is produced by the system.

(In the vegetable kingdom, also, it is interesting to note, "the distinctly anabolic overflow of nectar ceases at fertilization, and the surplus of continual preponderant anabolism is drafted into the growing seed or fruit."—Geddes and Thomson.)

One of the most striking characteristics of menstruation, as observed in the human female, is its variability in type, and in the quantity and duration of the discharge.

One need not specify these in detail. I wish in particular to direct attention to the great range of variation in the time of its appearance in relation to the development of those other phenomena which we call the "sexual characteristics."

In the majority of cases these features *e. g.*, activity in ovulation, menstruation, hair-development, growth of breasts, etc., become established at a definite period, known as puberty, which, as we know, varies according to climate, race, environment and other conditions.

But of far greater importance are the variations which prove that there may be no concurrent incidence in the determination of the phenomena in the individual. They are as follows :

1. Menstruation may begin very early in life, even within the first year, without the development of any of the other outward signs of

puberty. These become marked, at varying periods in different cases, and in different orders. Generally, they appear together after a number of years, but sometimes the breast changes precede the others, sometimes the growth of hair, sometimes the changes in bodily contour.

2. In other cases, the development of menstruation at a very early period may be associated with one or more of the other secondary sexual characteristics. Thus the breasts may be well-marked, or the external genitals well-developed, or the voice altered. The other features appear in later years.

3. In other cases some of the secondary sexual characteristics other than menstruation may be developed in very early life, this function becoming established sooner or later afterwards. Thus the breasts may become well-marked, menstruation following after months or years. In a case recorded by Bouchut, in which the breasts were well-formed at birth, menstruation began at the age of 22 months, and the rest of the sexual features became marked in the succeeding 2 years, so that at the age of 4 years the child had all the characters of a fully developed girl.

Sometimes the breasts and external genitals may develop early together. Sometimes the latter alone may be very early marked, being followed sooner or later afterwards by menstruation and the other phenomena.

Sometimes the breasts develop early along with axillary and pubic hairs, being followed after months or years by menstruation.

Sometimes the body-contour may resemble the adult form, the hair and external genitals being well developed, at a very early period.; the appearance of menstruation and the growth of the breasts being delayed for months or years.

4. As regards the condition of the internal genitals, only a few opportunities have presented themselves of observing them in the above-cited cases, so that it is impossible to know in how many ovulation was in progress or the uterus well-developed. It is, however, clearly established that in some of these precocious cases ovulation is in progress and the uterus with adult features. There can be no doubt, therefore, that puberty may be completely developed in the first years of life as regards the physical changes. As is to be expected the psychical alterations are wanting.

5. Finally, the cases must be alluded to, in which during infancy and child life, ovulation has been noted, though none of the other signs of puberty have been present. It has been found in progress even before birth. In the great majority of cases of normal develop-

ment of puberty, it may be in progress several months before the other phenomena appear.

In the adult state marked variations are found as regards the degree to which the sexual characters are developed.

These need scarcely be specified, so commonly are they observed by physicians.

They affect the breasts ; the pubic and axillary hairs ; the formation of the external genitals ; the type, quantity and duration of the menstrual discharge ; the psychical develcpment. These differences exist between different races and between the various members of the same race.

From the consideration of the many facts to which I have referred we are forced, it seems to me, to regard the menstrual function as a highly specialised means, gradually produced, in the evolution of the highest mammals by which the two great factors in tissue metabolism —the anabolic and katabolic, are properly balanced.

Normally it becomes established along with the various phenomena which characterise the development of sexual activity—at puberty, because it is then that the metabolic habit peculiar to females, viz., predominence of anabolism manifests itself.

The rythmical character of the menstrual function has probably been gradually determined by the forces of evolution, and the marked range of variations which it presents in the human female (unassociated with pathological conditions) points very strongly to an early period of instability in the process, preceding its present fairly fixed habit. It is, indeed, impossible for us to think of a rational explanation for the peculiarities which are found except on the ground of biological variations—atavistic reminiscences.

The menstrual function, then, being closely correlated with the well recognized sexual characters is, like them, undoubtedly closely related to a nervous regulating mechanism, the nature of which is unknown as yet. There may be a special cord centre governed by still higher cortical centres, but there is also a subtle and intimate connection between the sexual functions and the general nervous mechanism of the body.

As Johnstone ably states in regard to the uterus, " its association with ovarian activity is that of two separate departments of an army, each of whose work must be thoroughly accomplished before the one common object can be attained. They are both controlled by branches from the sympathetic system, and instead of their actions being determined by each other, their orders come from that higher power which controls all functional activity."

It is this correlation which has been wrongly interpreted, especially in the case of the tubal and ovarian functions, with neither of which is the process *directly* connected. That it is indirectly related to them and capable of being influenced by them cannot be denied, and that of the whole sexual apparatus the ovaries are the "predominant partner" is not to be wondered at. We have proofs enough as regards their influence on body-metabolism, *e. g.*, in osteomalacia, marked improvement immediately follows removal of the ovaries. Whether this be due, as Curatulo believes, to the secretion by these organs of a chemical substance capable of facilitating the oxidation of the phosphoric organic substances supplying material for the bone salts, or, whether it acts merely by altering an ill-proportioned relationship between anabolic and katabolic functions, thus secondarily affecting the diseased process, is only a matter of speculation.

After the removal of the ovaries in gynaecological practice, certain effects are noted, which must be associated with altered neuro-trophic functions. Thus "heats" or "flushes," vaso-motor storms are very often troublesome features. The uterus tends to shrink, the gland-tissue of the breast tends to atrophy, while fat is often increased in the body. There is, however, very great variation as regards the effect of removal on the sexual characters. These are so marked as to demand a careful investigation for the purpose of determining them accurately and of establishing a comparison between the bodily changes following the operation and those taking place in connection with the normal climacteric. At present many exaggerated ideas are current.

While, in the majority of cases, removal of the ovaries is followed by an altered body-metabolism owing to the absence of the most important sexual organ, marked by disappearance of the anabolic overflow of menstruation, it is not surprising that variations should occur in the alterations produced, so that instances might occur in which the menstrual function does not cease. It is certainly not an uncommon experience to find discharges of blood from the uterus after the operation, apparently, an indication that the changes in body-metabolism are being brought about but gradually in these cases.

As regards the relation of the tubes to menstruation, if Lawson Tait's observations be accurate, viz: that after their removal menstruation ceases in the great majority of cases, the ovaries being left behind, the explanation may be, either that such a marked alteration in the genital tract may reflexly alter all the sexual functions along with body-metabolism, or that it may bring about the result through an indirect influence (such as inhibition of function) on the ovaries.

Bland Sutton's statements as regards the effects of removal of the tubes are directly opposed to those of Lawson Tait. His words are, "the Fallopian tubes exercise no influence on menstruation, and in order to produce artificial amenorrhœa both ovaries must be completely removed." I do not consider that Bland Sutton is justified in making these statements from the facts given by him. He quotes a few cases in which ligature of the tubes was performed without causing a cessation of menstruation. Tait, however, speaks of *removal of the tubes*, a much more serious disturbance.

Though there can be little doubt that menstruation has been established in the higher mammals by a gradual process of evolution, we have been entirely in the dark as to the steps of this process. Seeing that it is limited to the anthropidæ and simiadæ, the earliest appearance must have taken place among some common ancestors of both.

The peculiarity probably first began as a variation, which proved to be advantageous and by natural selection became a fixed character, being transmitted from generation to generation. Had it been of no advantage it would have been eliminated.

The only suggestion which has yet been advanced as to the possible advantage of this variation is that of W. E. Fothergill, who believes that it consisted in a greater tendency to conception owing to the rawing of the uterine mucosa.

This suggestion cannot be entertained in the light of present knowledge. We know that rawing of the surface is not necessary to the attachment and nidation of the fertilised ovum and that in the great mass of the mammals it does not occur.

The introduction of menstruation in the evolution of the mammalians has not been associated with greater but with diminished fertility, for there can be no doubt that the non-menstruating mammals are on the whole by far the most prolific.

Indeed, natural selection, has acted in the highest ranks of the animal world not in the direction of establishing a numerical superiority, but one based on the specialisation of individual characteristics in a selected number.

The advantage of the variation in our distant progenitors must therefore be sought for in relation to factors tending to diminish the number of offspring and to improve the quality of the individual.

As to the origin of the variation, the only reasonable speculation seems to be that it is associated with the development of the single uterus, with the diminution in the number of offspring, with the determination of the semi-erect or erect posture, characteristics found throughout the Primates, at least in the simiadæ and anthropidæ.

(The division of the Primates, known as the lemuridæ, stands by itself. These forms are believed not to be in the direct line of the other divisions but a separate offshoot from some early common mammalian stock. They have a double uterus and, so far as we know, do not menstruate.)

Of prime importance I believe, among these factors is the change from the bicornuate to the single condition of uterus. In the great mass of mammals with the former variety, the excess of anabolism is used up in the large demands of breeding and nursing. When the single uterus appeared as a variation marked by a diminished area for the attachment of ova, the unused anabolism found an outlet in the escape of blood.

It is possible that this took place at first from different parts of the body thus helping to explain the occasional occurrence in females of "vicarious menstruation."

If this were the case, natural selection must have acted in eliminating all except those in whom the blood escaped from the uterus.

But it is also likely that the tendency to sit on the ischial tuberosities and to move about more or less in the semi-erect position may have somewhat determined the occurrence of the congestion chiefly in the pelvis, relief being found by a discharge from the delicate mucosa.

The blending of two blood-supplies in a single uterus, which had previously been distributed to two cornua, must have had an influence in inducing a special tendency to uterine congestion.

Probably also another factor helped to determine the localisation of the congestion to the pelvis, viz: the habit already fixed among many of the lower mammals of the periodic pelvic congestion of the rutting period.

In the beginning it is likely that the menstrual discharge took place at irregular intervals (thus explaining the occasional irregular types which are now found among females.)

Natural selection would here come into play in determining regularity of type.

Females who were irregular in regard to the discharge would be objects of inconvenience to the males who would very soon learn to seek out and prefer those whose unseemliness manifested itself only at expected and definite periods, and so gradually regularity would come to be the predominent feature in succeeding generations of offspring.

It is a striking fact that among all races there is a careful avoidance of menstruating females by the males. This is particularly marked in most primitive peoples. Very possibly it had its origin in a feeling of disgust on the part of the males, and it is not difficult to understand how among the earliest human beings, there might gradually develop the belief that women were possessed of some unclean or evil spirit which had to escape periodically.

It is thus easy to explain the universal though varied customs and practices prevalent in many races, by which the woman is forced at her periods to avoid association with others, to abstain from coitus with men and to withdraw even from observation in order that her evil influence might not spread.

Next, it is of great interest to inquire into the possible gains that might result from the fixing of the menstrual process in females.

It is a remarkable fact that in the highest mammals, viz: the simiadæ and anthropidæ, is found the highest development of the altruistic principle as exhibited between parents and offspring. As Westermarck points out, among the invertebrata the male is interested only in the act of fertilisation, while the female shows no further concern or responsibility after she has laid her eggs. In the lower vertebrata parental care is almost unknown, though there are a few exceptions, *e. g.*, chiefly in the chelonia : the males caring for the young in some cases, the females in others, while in a few instances there is joint parental attention.

In the birds, however, it is the rule that the parents live in most intimate relationship, both during and after the breeding season, the female hatching and rearing, the male acting as protector and provider of food.

Among the great mass of mammalians, below the primates this is not the case ; the mothers alone showing great concern for the young offspring while generally the males are only interested in the females at the rutting time.

Exceptions are, however, found *e. g.*, among whales, seals, certain deer, moles, squirrels and a few other forms ; the parents remain together after the birth of the young, the male acting as protector.

Among the Primates the rule is that the males and females unite in a more or less enduring partnership, both having great concern for the care of the offspring, the males possessing one or more wives. There is an abundance of facts to establish this statement and from them Westermarck has established his induction in a masterly work, that our human marriage is an inheritance from an ape-like ancestor, controverting the long held belief of Sir John Lubbock and others that our progenitors formed one vast free-love community where promiscuity of sexual intercourse prevailed.

This habit is therefore another interesting posssession of mammals with a single uterus. It marks a great advance in the character of the individual above the types found in the lower orders of animal life.

Very evidently it was fostered by means of natural selection, being most essential where the female gave birth to a small number of young who passed a long time in a state of helpless infancy and tutelage. Such a species, undoubtedly, stands a better chance of surviving when the parents unite their energies in the task of protecting and nurturing the offspring.

Indeed, it would appear that the great determining factor of conjugal relationship is care for the young. Among several primitive races (and in some of the highest) marriage is never supposed to be established until offspring appear.

Wherever in the animal kingdom we find that the parents have no concern with their offspring, the females give birth to a very large number of offspring—the prodigality of births allowing of the safeguarding of the preservation of the species. Thus the cod lays each year about a million eggs, to which she gives no after-care, and, probably, the greater number become destroyed. On the other hand the turtle-dove lays only two eggs, but owing to the care which the parents give to the young they generally grow to maturity.

Another important point to notice regarding intercourse between the sexes, is that while among the majority of mammals there are special times of pairing, conditioned by various necessities, different in different species, among the quadrumana the rule is probable that fruitful intercourse may take place at any time, though undoubtedly exceptions occur owing to conditions of food, environment, etc. In the evolution, therefore, of the higher mammals possessing one uterus, there has been a departure from the condition of periodic excesses of sexual rioting to one in which there is especially in the female, a more diffuse and consequently less intense manifestation of the sex instinct.

The menstrual function occurring regularly in animals so placed, must have served beneficially in giving the mothers continually recurring periods of ensured rest (for so far as we know coitus is universally desisted from during menstruation) and in teaching the males continual lessons in self-restraint.

Relation of Menstruation to Rut.—There is a wide-spread belief that these phenomena are identical. Thus a very recent writer (Letourneau) states that " menstruation is essentially identical with the intimate phenomena of rut in the females of mammals and corresponds to an ovarian congestion, or to the swelling and bursting of one or more Graafian follicles. A few writers have in recent years disputed this view, among whom may be chiefly mentioned Lawson Tait.

There are many who believe that the rut or œstrus, or pairing time, is conditioned by ovulation—that ova are only shed at these intervals causing the phenomena. There is no basis of facts for this statement. The examination of many rutting animals proves that ovulation goes on at all times. The origin and significance of rut are uncertain, but it seems probable that the habit has been developed by natural selection for the purpose of limiting the chance of fertilisation to certain seasons mainly with reference to dietetic and climatic requirements for the offspring.

Among the mammalians this period is found at all times of the year. Thus, the bat pairs in January and February; the wild-cat and fox in February; the weasel in March; the musk ox in August; the badger in October; the orongo-antelope in November and December.

When the different cases are enquired into it will be found that the time of pairing is related to the duration of pregnancy, it being necessary that the young should be born at a time when they stand the best chance of living.

Thus the majority of mammals produce offspring early in the year; in the tropics at the beginning of the rainy season—the time of birth evidently being related to abundance of food, water, warmth of climate, conditions most favourable to existence. In polar and temperate regions the animals pair at a later period than in warm countries. These differences are seen when the same species are placed under different climatic conditions.

When no definite pairing system exists, as among elephants, whales, many rodents, the explanation is very evident. The conditions of their environment and of their food supply are such as not to necessitate the birth of offspring at special times.

Among the primates it is doubtful if there is a rutting season among many species. It is stated by some observers that it exists in the orang-outang and gorilla. In general it is to be expected that in the simiadæ and anthropidæ, whose food supply is of a much more diverse nature than in the lower mammalians, consisting of animal and vegetable matter in different forms, there is no necessity for the birth of offspring at special times. Moreover, it must be remembered that the anxious time as regards the newly born does not last only for a few months after birth in the simiadæ, but for years, the period of infancy being long just as in the case of *homo*. It is therefore likely that as far as food requirements are concerned one season is as propitious as another for birth.

Another important factor must be borne in mind, viz: that where there is a strong development of parental affection and conjoint parental care for the young, an important additional reason exists for diminishing the necessity of special pairing seasons. This is all the more marked in the anthropidæ where, owing to a higher intelligence, individuals learn to combat the injurious influences of their environment and to make it possible for the offspring to have as good a chance of surviving at one time of the year as at another.

If then, there be found exceptional cases of special pairing season among the higher primates, it must be because natural selection has conserved the habit in relation to the special conditions in which those species are placed.

Among the reptilians and birds, the rule is that pairing occurs in the spring, and it is probable, that, as Westermarck points out, the world-wide association of the springtime with the awakening of sexual affinities has been based upon the observations made mainly on birds.

The modifications in the pairing season which can be induced by artificial means, *e. g.*, domestication, are a strong evidence in favour of the influence of external influences on reproduction among the higher vertebrata. Indeed, it is evident that just as rut becomes adapted to the requirements of separate species, so it may become altered in relation to the needs of individuals under varying conditions.

Another interesting fact must be mentioned viz: that while the rutting-period is practically the only time when the females will copulate with the males, the menstrual period is the time above all other periods when they will not engage in this act. This is universal among mankind and is true for the simiadæ as far as our observations go.

Moreover, the changes in connection with rut result among other things in softening and dilating the outer genitals for the reception of the penis, they being at other times in many animals too much constricted for this. It is well-known that a bitch will not generally allow the dog near her until the rut has been in progress for a time, *i. e.*, until the vulva and vagina are sufficiently dilated.

So far as our facts go, it seems likely that rut in the higher vertebrates is merely the expression of the force of sexual affinity necessary to ensure fertilisation of the ovum, which is found throughout the whole animal kingdom, diffusely spread in the lower forms, highly specialised and limited in the upper forms owing to the influences of environment and natural selection, and affecting both males and females alike. This participation of the males is important to bear in mind. It is found everywhere. Thus many fishes when the love period arrives put on brilliant colours, become vigorous and play about among the females in the most lively fashion—evidently in a state of sexual excitement. In some, *e. g.*, the stickleback and salmon great pugnacity is manifest. The male salmon develops a special crook in connection with the lower jaw at this time, while the teeth enlarge, markedly. Among many amphibians also many changes affect the males, sexual desire becoming very marked. Among the reptilia similar changes occur, the male tortoise for example being fierce and noisy. In snakes the scent-glands become active during the pairing-season.

Among the birds the changes in the love-season are very marked. The male is altered in various ways and takes to dancing, coquetting and to vocal and instrumental music. His scent-glands grow active; his ornaments become more marked, and he developes strong fighting tendencies.

Among mammals the intensification of sexual desire in the males, accompanied with a feeling of jealousy and a keenness to fight, is universal. In all orders the voice is used in the rutting-time more than in any other season. Indeed, the porcupine and giraffe are said to be mute at all other periods. In stags the larynx and thyroid enlarge when rut comes on. The nose of the male sea-serpent becomes greatly enlongated. In the bladder-nose seal the hood covering the head becomes markedly inflated. Scent-glands emit strong odours. In some cases the colour of the skin changes. *Among the great majority of females no such marked changes occur.* They play their normal role of passivity, the changes brought about by the wave of sexual excitement being mainly psychical.

In many mammalians the only physical changes recognizable at the œstrus are congestion of the soft parts in the pelvis, dilatation of the vulva and the vagina, and the free discharge of mucus which is often blood-stained. These differences between males and females in regard to the rutting period are in keeping with the organic distinction to which I have so often referred in this paper.

The manifold changes in the males are the outcome of their predominant katabolism.

The females need to conserve their energies, *i.e.*. their anabolic surplus, for the strain of pregnancy; consequently there is no waste in outward exuberant manifestations, except in very slight measure in the cases to which I have just alluded.

Finally, it may be stated that the relation of rut to menstruation in mammalian evolution is simply this—that when, owing to the various reasons which I have elaborated in an earlier part of this paper, menstruation appeared as a new variation, one of the factors in determining the escape of the anabolic overplus by way of the genital tract was the habit already fixed, in many of the mammalians with a bicornuate uterus of the periodic yearly pelvic congestion of the rutting time.

ON
HÆMORRHAGIC CYSTS OF THE THYROID WITH NOTES OF THREE CASES.*

BY

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In a recent number of the *Journal of Experimental Medicine*,[1] there appeared a very interesting and instructive paper by Dr. W. I. Bradley, embodying the result of a research upon the nature of certain cysts of the thyroid gland, the origin of which, he concluded, was hæmorrhagic.

During the past nine months we have had the opportunity of examining two cases of the same nature in the pathological department of the Royal Victoria Hospital,—one of these removed by Dr. Bell and one by Dr. Garrow. And as these specimens not only confirm the conclusions of Dr. Bradley, but also seem to elucidate some points left by him *sub judice*, I have ventured, under Dr. Adami's suggestion, to bring them before this Society.

Before reviewing Dr. Bradley's conclusions and remarking on the present specimens, it may not be out of place to mention a few points of interest in the history of the subject. I owe the information to Wölfler's work on operations upon the thyroid.[2]

Cysts have been extirpated since the time of Celsus,[3] who recommended cutting down on them, and then either destroying them with caustics, or doing a blunt dissection of the intact cyst. His method of extirpation was followed by Galen,[4] who drew attention to possible wounding of the great vessels and the recurrent nerve: by Aiteus,[5] the Arab Albucasis and others of the dark and middle ages.

From the 13th to the 18th century, the operative treatment of these cysts seems to have been fairly common. Rulandus[6] in the 13th century recommends the use of the seton and the hot iron, and draws attention to the necessity of extirpation of the whole capsule on account of the danger of recurrence. Laufrancus a little later advises simple incision and cleaning out of the cyst. The father of Scultetus opened a thyroid cyst and emptied the fluid contents—with successful result.

In the 18th century, Johann Astruc recommended puncture with the trocar for these cysts, and the seton when the contents are thick.

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* Read before the Montreal Medico-Chirurgical Society, January 29th, 1897.

During this century, three main methods of operating upon thyroid cysts have been brought forward and advocated in turn by various surgeons. Mannoir, in 1799, and Velpeau, in 1843, advised puncture with injection of caûstic agents. Then Beck in 1826 held out for simple incision of the cysts. Finally Scutin[7] in 1833 revived extirpation, which had apparently fallen into disuse. But on account of the greater danger of sepsis, extirpation, until the age of antisepsis arrived, had to give way in the majority of instances to the former two methods.

It was perhaps from this cause that, until lately, little if anything, was written upon the histology of thyroid cysts. They were not taken out. and could therefore not be examined.

As Dr. Shepherd remarks in his article on the Surgical Treatment of Bronchocele[8] the "Enucleation" method was 'adopted first by Juillard, Rottman, and others, but to Prof. Socin[11] belonged the credit of first systematising the operation and bringing it prominently before the profession.' And it might be said, in parenthesis, that, on this side of the water, it was mainly Dr. Shepherd's article which drew attention to the value of enucleation as the operation of choice in these cases. Socin's work was only a little over 10 years ago. For some few years previous, I should add Wölfler had had numerous opportunities of examining thyroids, furnished him by Billroth's method of total extirpation. It is this method of enucleation which permits fuller histological study of these cystic cases.

However, cysts of hæmorrhagic origin seem in particular to have received very little attention, until Wölfler's work appeared in 1883. Rokitansky,[9] in the forties, showed that thyroid hæmorrhages occurred for the greater part only in neoplastic thyroid tissue. Wölfler, after describing cyst-adenomata of the thyroid, and agreeing with Rokitansky that it is only in such tissue that hæmorrhages usually occur, goes on to say: "Such hæmorrhagic tumours, (he is referring to those produced by extensive hæmorrhage) it is, which, in the course of time, turn into thyroid cysts, the wall of which is formed by the cortex of the original adenomatous area, this cortex undergoing partial fibrous degeneration.

It is, however, with Wölfler's[10] explanation of the origin of these hæmorrhagic cysts that Bradley disagrees.

In order to understand early the conclusions at which the latter arrived, it will be necessary to describe in some detail the histological structures of these cysts, as shown in his eight cases, and in the two cases which form the *raison d'être* of this paper.

The points on which is based the pathological diagnosis lie both in the cyst-wall and the cyst contents. To quote Bradley: "The contents differ markedly from those of the ordinary vesicles of the thyroid gland They are fluid, and in general present evidences of containing blood or derivatives from the blood; they vary from a straw-coloured fluid, through greenish brown, to a dark brown grumous fluid; or again, actual blood clots may be present. . . . . They often contain leucocytes and cholesterin crystals.

With regard to the nature of the cyst-wall, this is of a somewhat peculiar character. Although very definitely fibrous in composition, it is not sharply defined. The layers composing it are not truly concentric; here and there between them occur masses of small cells, which, by comparison with the tissues immediately outside the cyst-wall, are seen to be clearly the atrophied remains of gland tissue. These features explain why it is that in enucleation the cysts are found not to be sharply defined from their surroundings and permit successive irregular layers to be partially peeled off. The wall, in fact, passes gradually into the bands of interstitial tissue running between the surrounding collections of vesicles and evidently represents not so much a new formation of fibrous tissue around the cyst as a compression of the surrounding thyroid tissue. In the wall can be seen often here and there small areas of hæmorrhage, or pigmentation from old hæmorrhage. In the older cysts, judging from the thickness of the wall, it would appear that there had been a certain amount of new fibrous tissue formation.

Upon its inner aspect also the wall differs widely from that of an ordinary retention cyst; it is not lined either with well-developed epithelium, or with the remains of such tissue; while between the contained fluid and the fibrous envelope is to be found irregularly distributed a greater or less amount of intact gland tissue."

Then Bradley goes on to point out that the above mentioned characteristics clearly differentiate these cysts from the colloid retention cysts (called by Ziegler *Follicular* or *Dilatation* cysts) of Struma Colloides seu Gelatinosa. These never attain to any great size, their wall is covered with a continuous layer of epithelium, more or less flattened in different cases according to the amount of pressure exerted by the contents; the wall outside the epithelial lining is thin and indefinite.

From the observation of all these particulars in his eight cases, he concludes that these cysts are due to "an accumulation in a lobule of the thyroid . . . associated with some destruction of gland tissue;" that this destruction of gland tissue, in view of traces of pigmentation in the wall and in view of the nature of the contents, is due to intravesicular and interstitial hæmorrhage; which hæmorrhage is probably extensive, inasmuch as a small hæmorrhage would naturally result in a scar, while an extensive one would develop, as in the brain, into a hæmorrhagic cyst with fluid contents. He is led therefore to regard these large solitary cysts of the thyroid gland as being hæmorrhagic in origin.

Of course, Wölfler, with his extended opportunities of observing thyroids from Prof. Billroth's clinic, had not failed to comment on these cysts of the thyroid in which traces of hæmorrhage could be found. And Dr. Bradley gives him credit for this. We are confronted with a condition implying "destruction of thyroid tissue and accumulation of fluid in a space bordered by destroyed or partially destroyed vesicles." What is the cause at work leading to such destruction?

"According to Wölfler "(I quote Dr. Bradley's words)" the main cause is an over secretion of colloid in the vesicles, with consequent rupture of these, infiltration of the interstitial substance with colloid material, atrophy of the infiltrated tissue, and subsequent continued excretion of colloid from such of the epithelial cells of the ruptured vesicles as remain undestroyed."

One further detail which Wölfler mentions, omitted but implied by Bradley, is that with this rupture of the vesicles there occurs also usually slight hæmorrhage. In short Wölfler's share in describing thyroid cysts, and the advance made by Bradley might be summed up, it seems to me, somewhat as follows:—

The former, in his chapters on "Hæmorrhages in Goître" and "Bursting of Vesicles. Goîtrous Cysts" liber cit. pp. 178-183 et 191-194, enumerates three ways in which cysts may develop.

1. As above stated, viz., by "by bursting of vesicles" with "simultaneous hæmorrhages, usually very slight" from the thin-walled new-formed vessels in the inter-acinous tissue: "resulting in the formation of a cyst filled with colloid fluid more or less tinged with blood," (p. 193.) Such bursting of vesicles is only produced where colloid secretion is rapid and profuse.

2. Cysts may be formed by "confluence of vesicles" by a process analogous to that seen in the emphysematous lung. Here colloid secretion is gradual and slow. These, of course, are not hæmorrhagic.

3. By extensive hæmorrhage, inducing compression necrosis, and subsequent brown or yellow, soft, mushy masses (Erweichungsmassen), which finally become cysts filled with fluid contents.

All this, however, he sets down in the most unmethodical and obscure way—here a statement, there a statement; here an observation there an observation; here a fact, there a fact. So that one would search his work in vain for a paragraph or succession of paragraphs defining accurately as a class by itself these cysts of the thyroid due to hæmorrhages.

So much, nevertheless, he did write; so that he, as well as Dr. Bradley, described these cysts. Only the latter confines himself to cysts due to an extensive hæmorrhage (the contents having passed, as in the brain, through the stage of *erweichungsmassen* to that of more or less clear fluid). and does not recognise "bursting of the vesicles" as ever a possible cause; while Wölfler describes two kinds of hæmorrhagic cysts:—the one mainly colloid and very slightly hæmorrhagic, the other purely hæmorrhagic.

"Rupture of the follicles of a secreting organ (argues Bradley) as a result of overactivity is most rare. . . ." Secondly, the contents are not thick and colloid, but indicative of hæmorrhage. And in the third place hæmorrhages in the thyroid are of very frequent occurrence, while histological evidence of bursting of vesicles is wanting.

Hæmorrhage, then, is the immediate cause. What is the remote cause, the cause of the hæmorrhage? Of this Wölfler says nothing beyond noting the fact that the vessel walls in the adenomatous thyroid are extremely thin. Bradley goes much further. In his belief the causes are:

1. Increased size and increased vascularity of the adenomatous thyroid.

2. Its exposed position.

3. Vascular changes due to sexual disturbances, all three rendering the organ peculiarly liable to the fourth and immediate cause, traumatic rupture.

There were two points, however, which he professed himself unable to decide; the one, as to whether these cysts occur in and replace nodular adenomata of the gland tissue; the other, as to the true reason for that progressive enlargement in the early stages which is mentioned so frequently in the clinical reports.

It is upon these two questions that, as I believe, my specimens throw some light. They are taken from three cases—two operated on by Dr. Bell, and one by Dr. Garrow. The last is the one which demonstrates best the points in question, and I shall describe it in more detail than the others. An abstract of the clinical report (which I owe to Dr. Carron) is as follows:

"Mabel C., aet 16, admitted October 19, 1896. As long as patient can remember there has been some enlargement of the neck, but it was not until last spring that she noticed it was slightly larger, and had become firmer than before. She says there has always been some enlargement of the tumour during the summer period, but the variations have always been slight. It has never caused any pain or inconvenience. Has been treated periodically since childhood with varying success; but always returned to original size in spite of all remedies applied.

Past history—Has had scarlet fever and inflammation of the lungs. Otherwise, always been healthy.

Family history—One brother and one sister of a family of eleven had tumours in the thyroid region. No tuberculosis nor cancer.

The tumour, as described by Dr. Carron, was as follows: The left lobe of thyroid gland is enlarged and prominent, filling out the depressions between sternum and clavicle. It is elastic on pressure, and feels quite tense and resisting. The whole mass is about the size of a hen's egg, but is flat and oval. The right lobe is also slightly enlarged, but this is quite distinct from the left side, and is not large enough to be very noticeable. Just above the extremity of left enlargement is a small mass about the size of a marble, which is separate from the large mass. There is no pain nor tenderness over the tumour, and the skin over it is quite normal. No murmur heard over it.

Operation, Oct. 21st—Incision made over large cyst in the left lobe; and after puncture and emptying of contents it was easily dissected out. The contents were grumous and of a greenish brown colour. Besides this large cyst there were found numerous small nodules in its neighbourhood, scattered through the thyroid tissue. These varied in size from that of a pea up to that of a small plum. Some were solid but of a soft consistency, and rather white in colour, and possessed very thin capsules, so that several were accidentally incised during the process of enucleation. Others were definitely cystic to the naked eye, with contents varying from a dark bluish or brownish fluid up to semi-solid masses of broken-down dark-coloured tissue. Perhaps a dozen or more of these small nodules and cysts were shelled out with ease, and, if I remember rightly, appearances at the operation indicated that there were many more similar nodules and cysts of a size too small to enucleate left in the gland.

When I came to examine these operation specimens in the pathological department, I was struck by the presence of a small nodule clinging to the outer wall of the main cyst; and in preparing the specimens for microscopical examination I took care to obtain sections through this portion, that is, through both cyst-wall and adherent nodule. The latter presented on section even macroscopically a cystic condition, with contents consisting of dark coloured fluid, in very small quantity, and friable tissue. It is this specimen which, in particular, seemed to throw light on the points mentioned above. The histological examination revealed the following:

Section through the wall of the large cyst shows a dense, old-looking fibrous stroma with few proper connective tissue cells. It contains a few granules of blood pigment here and there, and rows of roundish and cuboid cells, evidently the remains of compressed and atrophied gland tissue. It is noticeable that these atrophied gland remains seem to be arranged as it were in layers, with dense fibrous tissue between and also that they seem on the whole to be more numerous and better preserved the nearer we get to the inner surface of the cyst.

Passing through the cyst-wall from inside to outside, and approaching the cystic nodule adherent to its external surface, we find the atrophied gland elements becoming more numerous, and the pigment granules, which were almost absent in the central layers of fibrous tissue, reappearing. The nodule we find to be composed of a small amount of adenomatous tissue, traversed by three or four bands of fibrous tissue in various directions. The vesicles are in the main large, and are partly filled with effused blood which is evidently no longer recent. Blood is also seen in the interstitial tissue. Clumps of pigment and large cells containing pigment granules can be seen in the fibrous tissue bands, especially along the edges; also small collections of thyroid cells, possibly embryonic, more probably in the beginning stages of atrophy from compression; all signs indicating hæmorrhage, not very old and yet no longer recent.

In the second case, that of a girl of 22, (whose clinical history yields no further feature of interest, except that growth of tumour was steady and not more rapid lately), the specimen as received by me consisted of a cyst about the size of a hen's egg attached firmly to a solid, congested, friable mass of about the same size, both being surrounded by one continuous capsule. The cyst, however, was separated from the solid body by its own capsule. There were several small calcareous masses in the wall of the cyst.

A section through the junction of the cyst and solid tumour shows the solid portion to be composed of ordinary adenomatous overgrowth without much increase in the colloid material. The cyst wall is composed of fairly dense fibrous tissue in which can be found scarcely any evidence of hæmorrhage. But, as one gets to the inner surface of the cyst wall, one comes on a very curious appearance, namely, four or five fairly distinct layers of alternate gland tissue (either embryonic or atrophied) and fibrous tissue showing traces of hæmorrhage. And quite on the inner side of the cyst wall the gland tissue layers alternate, not with fibrous tissue, but with hæmorrhagic layers, the latter, however, not very recent.

In the third case, the specimens obtained showed only a condition of ordinary parenchymatous overgrowth, in which could be seen dotted all over the specimen clumps of pigment granules and large round cells filled with pigment granules, evidencing multiple minute hæmorrhages in the new formed adenomatous tissue.

All these histological appearances, it seems to me, not only lend support to Bradley's conclusions, but also decide to a certain extent the two points which he left *sub judice*.

First, do these hæmorrhagic cysts originate in previous nodular adenomata? Dr. Garrow's case would seem to show that they do, or may so originate; for here in addition to a large hæmorrhagic cyst we have a small well-defined nodular adenoma or parenchymatous hypertrophy of gland tissue, which is the seat of what I cannot but conclude to be an early stage of the process. In other words the organ which is the seat of a hæmorrhagic cyst shows also a nodular adenoma presenting both interstitial and intracystic hæmorrhage.

Secondly, what is the nature of the progressive enlargement of these cysts? We would, *a priori*, expect that a hæmorrhagic cyst should increase irregularly—by fits and starts; *i. e.*, that the enlargement should be due to successive hæmorrhages. Undoubtedly, judging from the history of several cases, such sudden considerable hæmorrhages do occur; but it is equally evident from other histories, or from the same history at different periods, that the enlargement is very frequently progressive. The condition of the accessory nodule in this case seems to aid us in understanding the process; for small as the nodule is, the evidences of hæmorrhage in it show that there has been, not one single large rupture of a vessel, but successive slight hæmorrhages, so small, some of them, that one might almost speak of it as an occasional oozing of blood. Nor is this progressive enlargement of a hæmorrhagic cyst unknown in other parts of the body. Othæmatomatæ are essentially hæmorrhagic cysts and they also have been noticed to undergo gradual enlargement.

The second case, with its layers of adonomatous tissue, hæmorrhage, and fibrous tissue, shows, I think, with some degree of probability, the occurrence of repeated slight hæmorrhages in the interior of hæmorrhagic cysts which have already attained some size, probably from the remains of thyroid tissue left jutting into the cyst after previous hæmorrhages.

It is, then, in regard to the cause of hæmorrhages in the thyroid, and also in differentiating these cysts more clearly than has hitherto been done, making a distinct class of them, and giving a definite histological basis for the clinical facts, that Dr. Bradley's paper represents a considerable advance in our knowledge of the subject.

And, I think, that what has been said not only establishes his conclusions, but also lends strong support to the belief that one of the commonest forms of enlargement of the thyroid is due to a condition of localized adenomata of the gland tissue becoming the seat of repeated small, as well as of single extensive hæmorrhages.

In conclusion, I beg to express my thanks to Dr. Bell and Dr. Garrow for the material and the case reports upon which this paper is based and to Dr. Adami for advice throughout its course.

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A LARGE MOUTH CONCRETION.[1]

BY

JAMES BELL, M.D.,

Surgeon to the Royal Victoria Hospital.

Mrs. G., æt. 32, consulted me in September, 1896, for a large growth of long standing, which had filled up the right buccal cavity and had caused ulceration through the upper lip and great deformity of the face. The history was as follows: At the age of 12 years she had suffered from "fever," which had lasted a considerable time and had been followed by a slow convalescence, during which, she stated, that the teeth in the right side of the lower jaw had become loose and dropped out one by one, but without any pain or ulceration of the gums. The teeth had all dropped out in about six months, and then she began to notice a "shell-like" mass on the gums from which the teeth had fallen, apparently in the area occupied by the molar teeth. For ten years this growth was gradual and gave her practically no trouble. Then deformity of the face began to be noticeable and increased steadily. It was, however, only within the last year that marked increase in the size of the mass had been observed and troublesome symptoms had developed. On examination, the growth was found to fill the whole right cheek and to have produced great flattening of the right side of the face and the right nostril. It had ulcerated through the upper lip at one point, and the whole lip was greatly swollen. The point which presented at the angle of the mouth was evidently calcareous, but I mistook this for a simple coating of calcareous matter. The fetor was horrible and the mouth was so sensitive that no manipulation was possible. I looked upon it as a growth from the upper alveolar border, probably originally of the nature of epulis, but having recently (coincidently with the history of rapid increase in growth and symptoms), became malignant, and advised removal of the upper jaw. She went home, but returned and was admitted to the hospital on October 12th and prepared for operation on the 19th. When she was fully anæsthetized, I was able, for the first time, to make an examination of the mouth. I then found, to my surprise, that the mass consisted simply of a large concretion the size of a large hen's egg, lying free in the mouth, having formed a cavity for itself by displacement of the soft parts and absorption of the alveolar border of the lower jaw. It was so large that I removed it with considerable difficulty. A couple of teeth were embedded in its lower border, and it was clearly an enormous growth of "tartar" from the teeth. The ulceration of the mouth and lip healed rapidly, and the patient was discharged in a week quite well, except for the deformity which had occurred during the growth of the mass. The mass, which was oval in shape, measured 13½ cm. in its greatest circumference and 11 cm. in its smallest circumference.

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[1] Shown at the meeting of the Montreal Medico-Chirurgical Society, October 16th 1896.

RENAL AND VESICAL CALCULI.[1]

BY

JAMES BELL, M.D.,

Surgeon to the Royal Victoria Hospital.

(1) A large branched calculus removed from the right kidney. The patient, 42 years of age, a strong, active and healthy man and a free liver, was attacked with fever and general malaise on the 28th of July, 1896, while on a fishing excursion. About the 11th of August he began to have severe chills and was seen by a physician, who found a large amount of pus in the urine and a tender mass in the right lumbar region. He was seen in consultation by Dr. Bell on the 24th of August, who confirmed the diagnosis of right pyonephrosis, probably calculous, and advised operation. The patient did not consent until the 8th of September, when he was admitted to the Royal Victoria Hospital. He was then in a condition of general septicæmia, with fluid in both pleural cavities, an exhausting diarrhœa, daily chills, followed by profuse perspiration and tremendous rises of temperature. His condition was so bad that nothing was done until the 18th of Septeuber, when the kidney was exposed in the loin in the ordinary way. It was very firmly adhered posteriorly, and, when isolated, was very large and œdematous. The pelvis was distended and contained a quantity of pus, which was evacuated, as well as a large abscess, which was situated above and in front of the kidney. The most careful exploration failed to discover any stone. The organ was palpated between the fingers from end to end, needles were introduced into its substance at several points and a short beaked stone searcher was introduced into the pelvis and directed up towards the calyces, with the fingers of the other hand upon the convexity of the kidney. The conclusion was therefore arrived at that the suppuration could not be due to a calculus. The wound was left open and a drainage tube was carried up into the perirenal abcess cavity. The patient's condition improved very markedly, but the urine still contained pus; there was always some fever and there was a free discharge of pus from the wound. On the 27th of November the wound was reopened for exploratory purposes and with the intention of removing the kidney if necessary, when the calculus now exhibited was found imbedded in the substance of the kidney at its lower

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[1] Exhibited at the meeting of the Montreal Medico-Chirurgical Society, January 15, 1897.

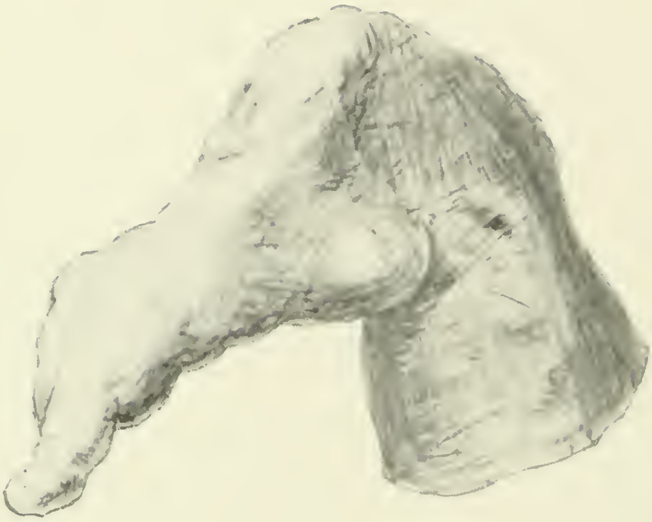
extremity, the point of the stone being directed down towards the pelvis of the kidney.

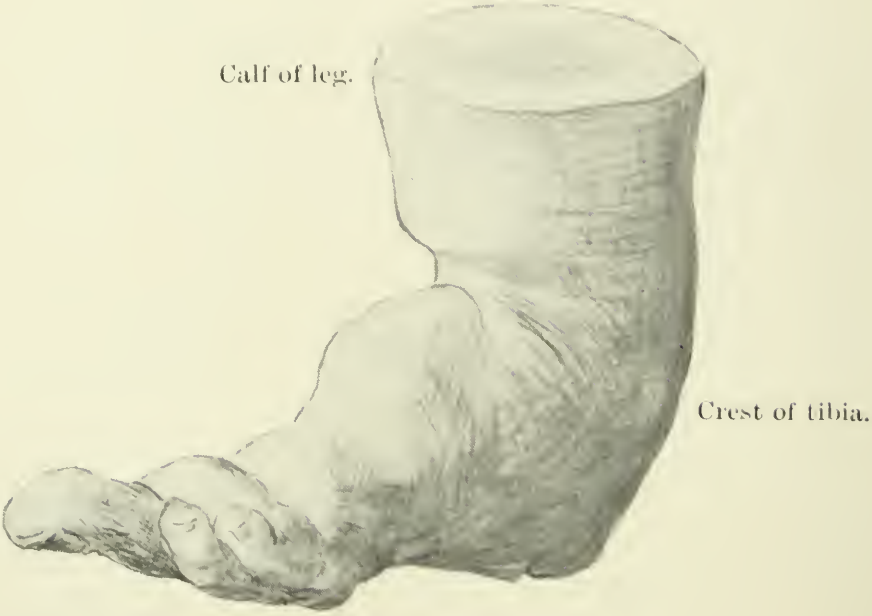
From this time pus disappeared from the urine, except in microscopic quantities, and the patient's condition improved very much. The dullness in the lower part of the right chest persisted, however, and on the 22nd of December pus was discovered by an aspirating needle. On the following day the anterior two inches of the eleventh rib were excised and a large subphrenic abscess drained. The progress of the patient since that date has been uninterrupted. The original loin wound is now quite closed.

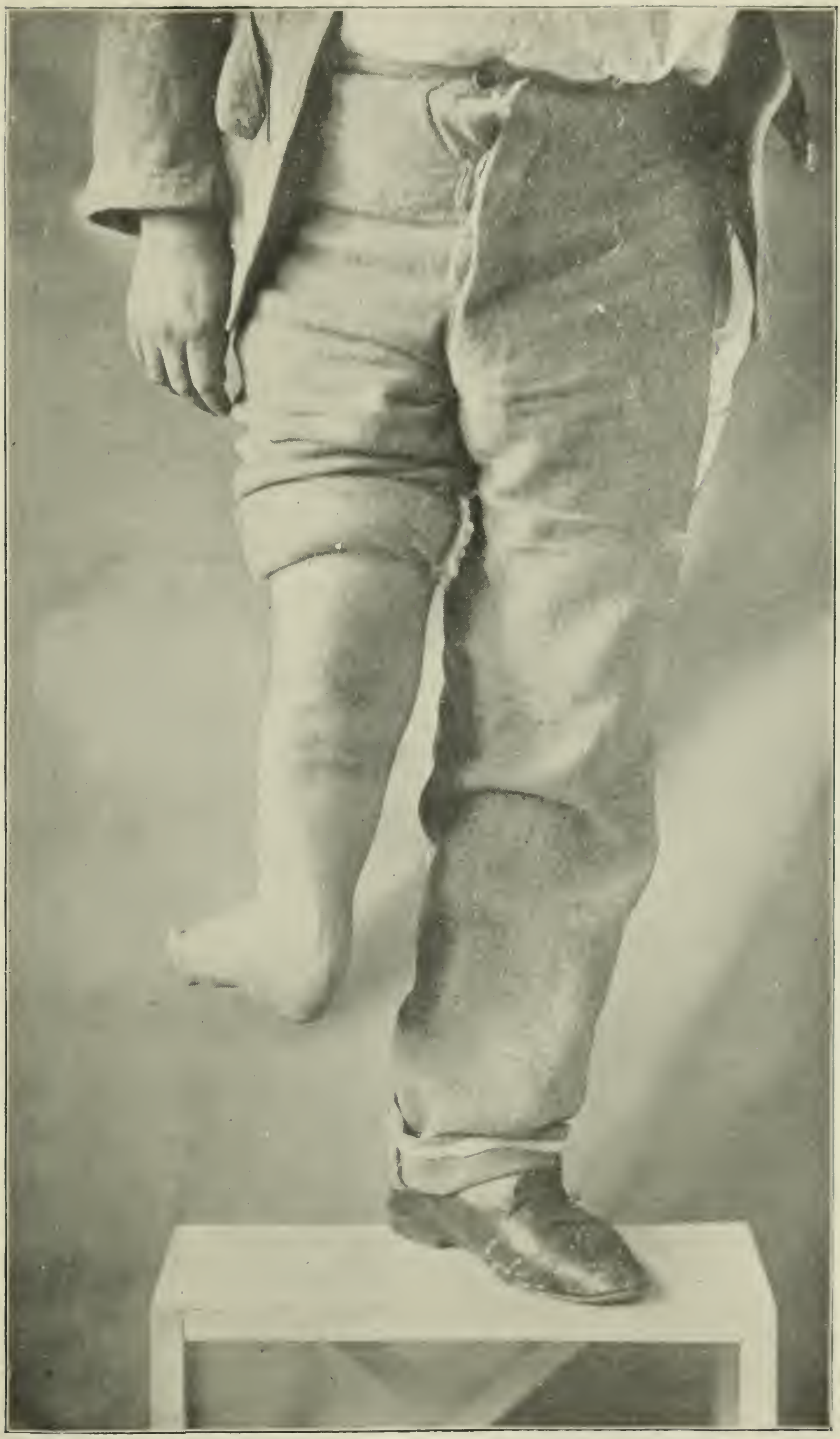
(2) Two medium sized phosphatic calculi, with the following history: The patient, S. M., æt. 76, was admitted to the Royal Victoria Hospital in April, 1896, in a toxæmic condition, with greatly enlarged prostate making catherisation extremely difficult, double (acute), orchitis and cystitis. One of the stones exhibited was removed then by supraputic route, and after a long illness the patient recovered and was discharged. In December he was readmitted on account of the suprapubic fistula, through which all the urine had been evacuated since the previous operation. His general health was excellent. On the 19th of December the prostate was removed by the combined suprapubic and perineal method and the second stone removed. The interest in these specimens lies in the fact that we have a definite observation upon the rate at which a phosphatic stone may develop in a bladder in which the urine is in a condition of alkaline fermentation,—the second stone, weighing 92·5 gr., having developed between the 11th of April and the 19th of December,—a few days over eight months.

(3) A large stone, phosphatic externally, removed by lateral lithotomy from a patient 26 years of age. There was a history of cystitis extending over a period of about five years with chills and fever following every attempt at intrumentation.

(4) Seven flattened, smooth, hard and light stones removed by suprapubic route. The patient 58 years of age had suffered from indifferent symptoms for about four years but only during the past year and a half had the symptoms became sufficiently troublesome to cause him to seek advice.




Calf of leg.
Crest of tibia.



AN EXTREME DEGREE OF TALIPES EQUINUS.[1]

BY

JAMES BELL, M.D.,
Surgeon to the Royal Victoria Hospital.

N. L., æt 31, French Canadian was admitted to the Royal Victoria Hospital in September, 1896, for cellulitis of the hand following a wound of the thumb received in opening a bottle some days previously. The interesting condition was the extreme degree of talipes equinus of the right foot which was bent back to such an extent that he walked on the instep and the lower part of the crest of the tibia corresponded to the os calcis, the toes being directed backwards and the foot at a right angle to the leg. He states that the condition was congenital but that in childhood the toes were in a straight line with the leg. The hyper-extension of the foot continued to increase gradually and when he was 13 years of age he was able to walk as at present on the dorsum of the foot. The foot is somewhat smaller than its fellow, there is absence of the fourth and fifth toes, and this leg is five inches shorter than the other. In walking he wears a metal frame on the boot which equalizes the length of the legs.

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[1] Exhibited at the meeting of the Montreal Medico-Chirurgical Society, October 16th, 1896.

Ephemerides, 1896.

By William Osler, M.D.

XVI.—Chills and Fever in Post-Partum Anæmia.

I saw, Nov. 11th, 1893, a Mrs. W., aged about 24, who had been confined about seven weeks previously with her first child. The labour was long and tedious, but there was not more than the average loss of blood. She had been a healthy, somewhat stout woman. Following delivery she became gradually anæmic, but with that exception there seemed to be no special cause for uneasiness. About two weeks before I saw her she began to have chills and high fever, followed by heavy sweats. The attacks recurred every four or five days and were naturally a source of great distress and anxiety to the patient's friends and to her physician. A local infection was suspected, but on repeated examinations nothing could be determined.

When I saw her she had a pronounced anæmia, with both corpuscles and hæmoglobin at about fifty per cent.: no leucocytosis: no plasmodia In spite of the anæmia her general condition was good, and I gave a favourable prognosis, and noted the case as one of post-partum anæmia. I learned subsequently from her physician that the chills recurred for several weeks, but that ultimately, under the use of iron and arsenic, she steadily improved and got quite well.

On June, 26th, 1896, Mrs. C., aged 35, from North Carolina, consulted me for anæmia, chills and fever. She had been delivered just two months before of her first child. The labour was difficult and she had lost much blood. For two weeks she did well; then she began to have fever for a part of each day. Usually towards evening she would have a chilly feeling, and sometimes an actual rigor, which would be followed by high temperature, and then a profuse sweat. She had got very pale, though she feels pretty well, has been up and about, and has been able to nurse the baby. For the past two weeks her temperature has scarcely ever been below 102°, and she has had as she expresses it, terrible night sweats.

The patient looked pale and a little thin; the temperature was 102.2°; pulse above 100, full in volume. Though she had had no cough, from her general appearance and her history I fully expected to find that she had either some local pelvic trouble, or had pulmonary tuberculosis. She had no uterine discharge and she was perfectly well in the pelvic regions. There were anæmic murmurs. The spleen was a little enlarged; the haemoglobin was under 60 per cent; there was no leucocytosis. The most careful examination of the lungs could detect nothing abnormal.

I was rather doubtful about this case, and did not feel at all certain that the diagnosis of post-partum anæmia would be borne out by subsequent events. The absence of leucocytosis seemed a hopeful feature. The recurring chills and high fever giving place to a continuous fever also seemed to me to be rather against a septic process. I urged her to go to the sea-coast, and to rest so long as she had any fever, to be in the open air, and to take plenty of good food.

I heard from her to-day, Feb. 9th, 1897, and she states that the fever and sweats gradually lessened, though the latter were very stubborn. "With the return of cool weather I rapidly regained my strength, and now I feel perfectly well again."

These two cases stand out in my experience as showing rather unusual features for post-partum anæmia. The condition in both had been regarded, naturally enough, as septic, though there were no local troubles apparent. Fever is common enough in all forms of severe anæmia, but recurring chills, fortunately less frequent, are very liable to lead the practitioner into error.

XVII.—LINEÆ ALBICANTES.

One is not often consulted about the atrophic lines on the skin, but two patients came this year worried about their presence.

A young girl, aged 17, stout and comely, was brought by her father from a neighbouring city, much distressed at the appearance of certain spots upon the knees and thighs and arms, particularly on the latter, as she was approaching the 'low-neck and short-sleeved' phase of existence. She had had scarlet fever badly about four years ago, and these marks had been noticed for the first time during convalescence. They had increased within the past two years, and were a source of much annoyance. They were chiefly about the knees and outer surface of the thighs, where they formed bluish bands, unusually distinct, 1 or 2 cm. in length, and 5 to 1 cm. in width, narrowing, as is usual, at the ends. There were three or four about the extensor surface of each elbow; two of these were large and attracted attention at once. She insisted that changes took place in them when she was 'out of sorts'; they get red and feel itchy, and in cold weather they had a bluish tint.

The other case was a young married man, in the stout stage, a well-nourished Hebrew, who had been badly scared by the appearance of ugly looking scars on the skin of the lower abdomen. On either side in the iliac regions the skin presented three or four pinkish-blue lines of atrophy. They felt like fissures in the skin, and the cuticle could be picked up readily. They had appeared since his marriage three months ago, and had been a source of much uneasiness to himself and to his wife. A few weeks ago I saw a remarkable instance of the development of the disease following a very rapid increase in weight during three months from 145 to nearly 190 pounds. They were similar in position to those in the case just mentioned, forming curvilinear bands, extending on either side from near the costal border to the iliac fossæ. The longest one of these was ten inches, and nearly three-fourths of an inch in breadth at its widest part. They were reddish blue in colour, and over them in certain lights, the whitish smooth cuticle glimmered.

There appear to be three different groups of these curious lineæ: (1) Those due to distention, as from pregnancy, lineæ gravidarum, and which develop in dropsy and in consequence of rapid increase in subcutaneous fat.

(2) Post-febrile atrophy, met with particularly after typhoid fever and also after scarlet fever, as in the case just mentioned. I have seen a number of instances after typhoid fever; the lineæ are usually about the outer aspect of the thighs, and upon the shoulders. I saw an extraordinary instance in 1895, at the seaside. One Sunday a number of us were bathing off the rocks, and my attention was directed particularly to a back the lower part of which was scored in deep transverse lines, one above the other, white and scar-like, but separated by narrow lines of healthy looking skin. The possessor of them told me that they had developed four or five years ago after a protracted attack of typhoid fever in Chicago.

(3) Idiopathic, seen in both men and women, about the knees, outer aspects of the thighs, abdomen, elbows and over the shoulders. This variety, quite as common in men as in women, has rarely the extent of the mechanical form

In none is the condition of any moment, and except the young lady above mentioned, I know of no instance in which the lineæ were a cause of disfigurement.

RETROSPECT
OF
CURRENT LITERATURE.

Medicine.

UNDER THE CHARGE OF JAMES STEWART.

Cirrhosis of the Liver.

Sir Dyce Duckworth, M.D., F.R.C.P. "Clinical Observations on Cirrhosis of the Liver."—*The Practitioner*, March, 1897.

After reviewing the classical symptoms of cirrhosis of the liver and briefly enumerating the minor indications of the same, Sir Dyce Duckworth emphasises the point that this disease is a *local one.* His conception of cirrhosis of the liver is that of by no means "a malady of widespread nature arising from alcoholic excesses, affecting almost every texture of the body, though presenting its greatest effects in the profound alteration undergone by the liver.

As causative agents of this disease it appears that alcohol is the only one considered, apart from syphilis, and the explanation of the infrequency of examples of the disease in view of the amount of alcohol consumed is found in the degree of vulnerability of tissue. Thus, in one instance alcohol finds the liver cells "specially vulnerable," and cirrhosis results, while with invulnerability of this tissue, alcohol works the excess along other lines. "Different tissues may react variously at different periods of life."

The common affirmation of a stage of early enlargement in atrophic cirrhosis, Sir Dyce regards as not absolutely proven, though such a condition seems not unlikely. One may find cases of cirrhotic enlargement attended with symptoms of cirrhosis where the rate of condensation of new formed tissue is slow.

Venous stigmata are to be regarded as of evil augury in all cases.

The two classes of hepatic cirrhosis recognized in England are (*a*) the atrophic and (*b*) the hypertrophic. Regarding the first variety as "the gin drinker's liver," Sir Dyce believes the second variety in some instances at least to be due to the alcoholic habit.

The "hobnail" roughness is not recognizable during life. The kidneys are remarkably free from disease in many cases of pure hepatic cirrhosis.

The varieties of hepatic cirrhosis the author provisionally classifies:

(*a*) The common or atrophic form due to alcoholic excess, with ascites, etc.

(*b*) Hypertrophic forms due to alcohol, with or without ascites, etc.

(*c*) Hypertrophic cirrhosis of biliary duct origin, with no ascites, but much jaundice.

In the discussion of the treatment, stress is laid upon habits of drinking and eating. Excess of fluids is to be avoided, alcohol forsworn, and the food taken to be as unstimulating as possible; alkalies and saline aperients for the catarrhal state of the alimentary tract, the bowels being moved with advantage twice daily. Ammonium chloride in full doses is in good repute, while delay in tapping the belly when pressure symptoms are present is unwarrantable.

In the later stages, however, the withholding of alcohol is a cause of much suffering and as such cases are almost without hope the indication is to relieve the suffering, since the disease cannot be cured. Hence under such circumstances, a moderate amount of alcohol in some form is admissible. Tapping in the later stages does not promise so much as when begun early and is indicated only when serious effects due to pressure threaten. Such an operation is not infrequently followed by symptoms of cerebral oppression.

Touching prophylaxis, Sir Dyce speaks strongly against the "innocent" habit of "nightly potations" of spirits and water which in many instances is followed by cirrhosis.

Heart Disease.

GRAHAM STEELL. "Heart Disease—A retrospect over twenty-five years."—*The Medical Chronicle*, Manchester, February 1897.

In his presidential address before the Manchester Medical Society in February, Dr. Graham Steell reviews his experience of twenty-five years of practice and observation on cardiac cases, and presents certain heart phenomena in a light almost altogether new. At least some of the views are partly, if not altogether, reactionary.

The "curable mitral regurgitation," of Dr. Balfour, his former chief and teacher, is better designated by "curable muscle-failure" of the heart.

Such a cardiac condition wrought the disturbance of the circulation through *a systole*. For this term Dr. Steell has substituted that of "systole catalectic," a contraction, stopping short of completion.

" Systole catalectic" may result from increase of the blood pressure or from disease of the heart muscle. Imperfect systole is followed by increased expansion, and this may eventually lead to *mitral regurgitation.* The conditions, under which such a valvular lesion occurs are reviewed on the following heads :

1. The old-fashioned rheumatic cases.

In this section the writer strongly urges against an erroneous diagnosis in many cases of rheumatic cardiac involvement, the error being that the endocardium is regarded as the primary and chief seat of the lesion, whereas the myocardium is the structure or tissue at fault, though this is not in a state of myocarditis nor that of its results.

The relation between adherent pericardium and cardiac dilatation as one of cause and effect is an open question.

The importance which once attached to mitral regurgitation as a result of rheumatic endocarditis has greatly diminished. Rheumatic lesions are usually those of stenosis, while septic or ulcerative endocarditis is the common and great cause for mitral insufficiency, and Dr. Steell would find in splenic enlargement in heart disease a sign of support to this view of septic endocarditis.

2. Cases formerly considered as those of mitral incompetence, pure and simple are now considered as those of mitral stenosis—the great rheumatic endocardial lesion.

He would exalt the importance of mitral stenosis and of muscular failure of the heart, as the two chief factors in producing circulatory changes—mitral regurgitation in all probability, being but an accident in the course of these morbid states already mentioned.

The writer further pointed out the notorious variability of the physical signs of mitral stenosis as well as their frequent absence.

The systolic murmur heard so often in the pulmonary area, the " region of romance " of Balfour, was mentioned but to remark that " it is of great frequency in all kinds of heart disease."

The pulsation in the second left intercostal space, seen so often in mitral stenosis as well as in muscular failure of anæmia, Dr. Steell regards as due to the infundibulum of the right ventricle rather than to the pulsating auricle as taught by Naunyn and Balfour. It is urged that the appendix of the auricle, the part anterior, becomes filled with decolourised clot and could not pulsate.

3. This group embraces those cases in which mitral regurgitation is due to simple muscular failure. These are some of the cases of imperfect systole. No auscultatory evidence of this condition may be available. This group is a very large one. Anæmics present many examples of this class and some of the so-called " hæmic " murmurs

may be attributable to such a condition of the mitral orifice. The cardiac failure of advanced chronic Bright's disease also comes into this category, while the alcoholic heart failure is doubtless a purely muscular one as well.

The views on aortic disease are substantially the same for many years.

The irregular varieties of angina in some of which the pain is referred to the epigastrium need special attention in making a diagnosis. Pericarditis is considered under four conditions. (*a*). There may be well marked friction without any symptoms or sequelæ of the disease; (*b*). There may be no friction; (*c*). Dulness and bronchial breathing frequently occur at the base of the left lung, posteriorly, in cases of a large amount of pericardial effusion; (*d*). Friction at the base of the heart in the pulmonary area and the generally "double cracking sound" heard in the same area, attributable to the heart movements against an emphysematous bulla at the edge of the lung, may be mistaken for each other. In the refinements of cardiac percussion Dr. Steell has no faith.

The number of cardinal symptoms of heart failure—dyspnœa, enlargement and tenderness of the liver, and dropsy, is increased by the addition of a fourth, viz., visible pulsation in the neck, either venous pulse or exaggerated arterial pulse. In therapeutics no drug has superseded digitalis and the "heresy" that it should not be used in aortic incompetence is passing away. Strophanthus and the nitrite salts have been introduced during this period and each has its place.

The dyspnœa of cardiac origin is best relieved by morphia and atropine, but caution is enjoined.

Paroxysms of angina pectoris are best treated with morphia and atropia subcutaneously and alcohol in hot water.

Each heart case is a case by itself for special consideration and treatment

W. F. Hamilton.

Surgery.

UNDER THE CHARGE OF GEORGE E. ARMSTRONG.

Dermatitis as a Sequel to Exposure to X Rays.

DRURY. "Dermatitis caused by Roentgen X Rays."—*British Medical Journal*, November 7th, 1896.

CROCKER. "A Case of Dermatitis from Roentgen Rays."—*British Medical Journal*, January 2nd, 1897.

REID. "A Case of Dermatitis as a Sequel to Exposure to X Rays."—*The Scottish Medical and Surgical Journal*, February, 1897.

As so often occurs, advances in scientific methods are found to have drawbacks.

A vesicular dermatitis has occasionally followed exposure to the X rays. In addition to the three cases referred to above, one case has been reported in *Nature*, one in the *New York Medical Record*, for April 25th, 1896, and in the epitome of the *British Medical Journal*, August 15th, 1896, a case of dermatitis and alopecia is abstracted from *Deut. Med. Woch.*, July 23rd, 1896.

Dr. Drury's patient was a gentleman, aged about 35, having symptoms of renal calculus. He was exposed to X rays to determine if possible, the presence or absence of a stone. The first exposure occupied one hour. At first five cells were used and later five more cells were added. The plate not proving satisfactory he was again exposed six days later, this time for an hour and a-half, ten cells being used. Nausea was felt after each exposure. The next evening after the second exposure he noticed the abdomen slightly red as if sunburned; a patch about 1½ inch square, just below the umbilicus being redder than the rest. This spot was exactly opposite the platinum plate in the tube. There was no itching nor pain. The third day the redness was more intense; on the fourth, some very small vesicles appeared; these very slowly increased in size during the next few days. The vesicles increased to large "bleds" and became ruptured; there was however no pain or itching.

By the eighteenth day after the second exposure great discomfort was felt, due to the abundant discharge pouring from the affected area. The patch had by this time increased in size and measured 7½ inches across by 8¼ inches long. When the sore was cleaned it had a smooth, glazed, pink surface, quite level with the surrounding skin and very sharply defined. It was painless and almost insensitive. There were no granulations, as apparently only the cuticular layer was lost, having a surface exactly like that seen when the cuticle is rubbed off a dissecting room subject, except that it was a bright pink colour.

It proved to be most difficult to heal. In fact was not healed at the time the report was made.

Crocker's patient was a lad aged 16, apprentice to a surgical instrument maker, who had been exposed to the X rays for an hour. A Crookes' tube had been placed about 5 inches from the epigastrium. The following day the skin felt irritable and was of a deep red colour in the area subjected to the rays of the tube. This irritability increased and six days after the experiment the skin felt stiff when he bent the body. Three days later vesicles began to form and during the two following days increased in size and numbers. Notwithstanding the application of a lactate of lead lotion, the vesicles ruptured and the epidermis of the vesicular portion separated, leaving a raw surface.

The downy hairs with which the abdomen was rather thickly covered were still present on the site of the affected area. The persistence of the hairs on the inflamed portion of the skin is interesting in connection with the depilatory action of the X rays recorded by Professor Daniel, of Vanderbilt University, and quoted in the *New York Medical Record* for April 25th, 1896. In this instance the experiment was made on a co-worker, Dr. Dudley. The tube was only half an inch distant from the hair and the exposure was for one hour. Twenty-one days later a bald spot, 2 inches in diameter was found corresponding with the size of the X ray field close to the tube. In this case there seems to have been no inflammatory or other visible lesion or sensory symptom preceding the falling out of the hair.

Dr. King, of Toronto, reports in the November number of the *Canadian Practitioner*, a very interesting case. The victim was a demonstrator of the Roentgen rays before public audiences, and was exposed to their influence sometimes at first for only two hours a day, without evil effects, but when it was increased to six or ten hours, his right hand which was most exposed, began to blister, and the nails to separate from their attachment at their proximal end. The application of picric acid not only gave relief to the burning sensation, but appeared to have some protecting influence. After resting, the hand soon recovered, and he resumed his work, his left hand being this time exposed; similar phenomena ensued and in addition, the left side of the face became swollen and red, and the hair of the head in front of the ear, fell off, together with the greater portion of his eyebrow and the left side of his moustache, and left whisker, which was almost bare, leaving the skin very soft and smooth. He also thought that his sight was somewhat impaired. It has been suggested that workers with these rays might wear red cloth gloves, or coat their hands and face with red paint which could be easily washed off.

Professor Reid suffered in his own person from exposure to the X rays.

The exposures to which he was subjected were as follows: Abdomen, November 2nd, 1896, twenty minutes, followed by forty minutes; chest, November 3rd, fifty minutes, followed on November 5th, by ninety minutes. The coil was of ten inch spark, fed by ten amperes, and the Crookes' tube ("focus" pattern) was some three inches from his waistcoat as he lay supine upon the table. On the evening of each exposure marked erythema of the skin of belly and chest were noticed immediately beneath the position of the vacuum tube, and in addition slight redness of the skin of the back over an area corresponding to the exit of the rays from the body. He at once commenced to rub in lanoline, consuming four tubes of this unguent in the next twelve days.

Vesicles soon appeared and gradually collapsed, so that by the fourteenth or fifteenth the cuticle was loose. On the back, vesicles also were formed, but soon subsided. By seventeen days the cuticle began to peel off, leaving a surface exactly like that seen when the cuticle is rubbed off a dissecting room subject except that it was a bright red colour.

The surface left was "raw" and "weeping" but not very painful. It was kept well dusted with powdered talc and protected from the friction of the clothes by a pad of wadding.

The discharge next became sero-purulent, and since he had then lost some thirty square inches of cuticle, and must have been daily losing considerable amounts of albumen in the discharge, it was with difficulty that he attended to his laboratory duties.

By twenty-seven days the surface was dry and in thirty-three quite healed.

At the time of writing (Jan. 11th, 1897), there is no vestige of hair left upon the chest, and he had not been troubled with shaving his chin for six weeks, the hair having come out by the bulbs to the touch of the razor twenty-two days after the chest exposure, after a slight erythema of the skin, not followed by loss of cuticle.

The waistcoat within which he suffered was lined with scarlet flannel.

Fortunately there seems to be little or no danger in exposing patients to one short exposure. *Geo E Armstrong,*

Gynaecology.

Curiosities in Abdominal and Pelvic Tumours.

CROOM, J. Halliday. "Curious Relations of Abdominal and Pelvic Tumours."—*Edinb. Medical Journal*, Jan. 1897.

HANDFIELD-JONES. "Rapid increase in size of Ovarian Tumours and Pyosalpinx.',—*Practitioner*, December, 1896.

At a meeting of the Edinb. Obstetrical Society the following series of cases, showing how impossible it is always to make an accurate diagnosis in cases of disease of the pelvic organs, was related by Dr. Croom. :

Case I.—Here, the patient had a cystic abdominal tumour situated above the umbilicus in the middle line. It gave her no trouble except urinary discomfort for some months before she was seen by the doctor and was only discovered during an attack of abdominal pain which followed severe exercise. The tumour being fixed and spherical, the diagnosis was doubtful. At the operation, it proved to be a cystic tumour of one of the ovaries, which was adherent to the anterior abdominal wall and had a pedicle measuring 10 inches in length which was not twisted.

Case II.—On making a pelvic examination of this patient, a tense cystic tumour pushing the uterus upwards and forwards was found. On account of its apparent fixity, it was diagnosed as a sessile ovarian tumour. On opening the abdomen for its removal, it was found to be quite free, having neither adhesion nor pedicle, and was removed without the use of a single ligature or the separation of a single adhesion. The surface was quite smooth except at one point where there was a slight roughening.

Case III.—This patient was admitted to hospital suffering from peritonitis, with a small dull area between the pubes and umbilicus, and a diagnosis of cystic tumour with a twisted pedicle was made. At the operation, an ovarian cystic tumour was found. This was adherent to the anterior abdominal wall, and the pedicle was not only twisted and very small, but it had given way close to the tumour. This must have occurred at a distant date as the pedicle was dry and there was no trace of hæmorrhage.

Case IV.—The diagnosis in this case, was of a parovarian tumour, and at the operation a pale fluid was drawn off. One small adhesion to the anterior abdominal wall was tied off, after which the tumour was lifted out of the abdominal cavity, there being absolutely no pedicle or any other adhesion than that stated above. Both ovaries were intact, but the nature of the growth was not made out owing to the tumour being destroyed immediately after the operation, there being some misunderstanding concerning it.

Case V.—This patient gave a history of premenstrual pain, menorrhagia and sterility. On making a vaginal examination, a firm hard tumour the size of a billiard ball, was felt in the pouch of Douglas. Abdominal section was performed, when the mass was found to be perfectly free without adhesions and was readily picked up out of the utero-sacral fossa. The patient subsequently became pregnant. The tumour was found to consist of a Fallopian tube, the walls of which were very thin and contained blood-clot.

In connection with the above, it is interesting to note the extreme rapidity with which enlargements of the internal sexual organs of the female may increase in size, as shown by four cases, cited by Dr. Handfield-Jones in a clinical lecture delivered before the students of St. Mary's Hospital, London.

Case I.—This patient when first seen had a small cyst of the ovary contained entirely within the pelvis. In ten days time, it had extended almost up to the umbilicus, and was removed.

Case II.—On examining this patient, a solid tumour, the size of a small cocoanut, was found on the left side, and diagnosed as the left ovary. The right ovary was the size of a walnut and irregular in contour. She was seen on and off for twelve months without any increase in size of the tumour. The patient then left town, but had an attack of intense abdominal pain, which was followed by rapid increase in the size of the abdomen. Six weeks after this attack, she returned to town and the whole abdomen was found to be occupied by a large multi-locular ovarian cyst, which the patient stated had not grown any larger for the last three weeks, *i.e.*, it had attained its full size in three weeks from the attack of pain. The tumour of the left ovary could not be felt. On operating, the cyst was found to have originated in the right ovary, while the tumour of the other side had been pushed up underneath the ribs.

Case III —The third patient was seen on December 9th, 1895, having been delivered of a full-time child three days previously by an experienced medical man, who did not discover anything abnormal in the pelvis, the labour being simple and uncomplicated. On the following day, the patient complained of her abdomen feeling distended, and on the next day a cystic tumour was observed which extended to above the umbilicus. During the previous August, the patient had had pain in the right iliac region, but this pain was not constant, being more at night and passing off during the day. She suffered from œdema of the legs during the last half of her pregnancy, but she stated that her abdomen was no larger than during previous pregnancies. During the one day that she was in the hospital, the tumour increased about ⅓ in size, extending up to the xyphoid cartilage and causing greatly distressed respiration.

At the operation, a multi-locular cyst of the right ovary was removed. The contained fluid was reddish and blood-stained, and the walls of the growth contained effused blood.

Case IV.—When the patient was first examined, the left ovary and tube were slightly thickened, and the right ovary was somewhat enlarged, but its tube was unaffected. Under an anæsthetic for curettage of the uterus. three weeks later, the ovary and tubes formed a mass the size of a walnut, while on the left side was a structure as large as a tangerine orange. At the end of a fortnight more, abdominal section was performed, when the right tube was found to be greatly distended with sero-pus and the walls to be very thin. There were no adhesions, so that it was easily removed. The left tube was similarly, but not so greatly, distended. Both ovaries were the seat of chronic inflammation and enlarged. Within five weeks these tubes had become so enlarged that the right one contained between five and six ounces and the left gave about four ounces of sero-pus.

Novel Method of Performing Ovariotomy.

SEVITSKY. *Annales de Gynécologie et Obstetrique*, 1896.

Sevitsky reports a case in which he removed an ovarian cyst per rectum during labour, but it is needless to say that the operation was not one of selection. The case was one of forceps delivery and, while drawing down the head, the tumour ruptured and discharged its contents per rectum. After delivery the cyst was drawn out through the rent in the rectal wall, was tied off and removed, the opening in the bowel being sutured. During the third stage, there was flooding, and the patient died of pelvic peritonitis on the second day.

Endometritis.

DÖDERLEIN. *Centralblatt für Gynâkologie*, Nov. 7th, 1896.

This writer considers that no such thing as inflammation only of the uterine mucosa exists, but that the uterus itself is also always involved.

He classifies this metro-endometritis as either infectious or non-infectious. In the infectious group, one finds septic and saprophytic, gonorrhœal, tubercular, syphilitic or diphtheritic endometritis. The second group originates in the tubes or ovaries, tumours (cancer or fibroid) nervous irritation, circulatory disturbances, anomalies of the development of the ovum or puerperal subinvolution. Microscopic anatomical characters show nothing definite as regards cause. He considers however, that interstitial endometrititis is caused only by infection, while glandular and hyperplastic arise through inflammation of other parts of the uterus.

Incontinence of Urine an Early Symptom of Uterine Prolapsus.

BOURSIER. *Arch. Clin. de Bordeaux*, 511-520, 1896.

In a paper upon uterine prolapse, published in the above journal, Boursier states that one of the earliest symptoms of prolapsus uteri is urinary incontinence, which may be either false or true and with or without pain. It is worse when the patient is in an upright position, straining or fatigued, and disappears on the patient reclining,

It is due to some lesion of the urethra, so that some operation for its correction is indicated.

Gland Extracts in Gynæcology.

BELL, ROBT. *Internat. Med. Mag.*, July, 1897.

In a paper read before the British Gynæcological Society, Dr. Bell, upholds the use of these substances in the treatment of disease of the uterus and ovaries.

He considered that the healthy condition of the skin, mucous membrane, etc., is due to some action of the *thyroid gland*, as evidenced by the beneficial action of thyroid extract in psoriasis, where the changes in the epithelium are controlled by its administration. He infers from the above, that the absence of some obscure catabolic action of the gland enables the epithelium of the cervix to proliferate and so form carcinoma. Diseased conditions of the thyroid are almost invariably accompanied by metrorrhagia, thus showing that the function of the gland exerts, in some way, an influence upon the mucous membrane of the whole uterus.

The influence of the *parotid gland* is exerted upon the ovaries, but it is uncertain whether or not disease of that gland causes or favours disease of the ovaries. However, where these latter are affected, Dr. Bell maintains that they can be restored to their normal condition by the internal administration of the parotids of young calves, pigs or sheep.

He also claims that it is beyond dispute that fibroid tumours, chronic inflammation, or a flaccid condition of the uterus, can be relieved by giving mammary gland, either as an elixir or extract.

In support of these contentions he relates three cancers of uterus cured by thyroid; two fibroids of uterus relieved by mammary gland elixir; one hyperplasia of uterus cured by mammary gland palatinoids; one fibroid of ovary relieved by parotid palatinoids; four enlarged ovaries cured by parotid palatinoids plus ichthyol tampons.

F. A. L. Lockhart.

Pharmacology and Therapeutics.

UNDER THE CHARGE OF A. D. BLACKADER.

Treatment of Angina Pectoris.

OSLER, WILLIAM. "Lectures on Angina Pectoris and Allied States —Treatment of Angina."—*New York Medical Journal*, December, 1896.

We have read with a great deal of pleasure this series of lectures. Speaking of the treatment of this often terrible affection, the writer emphasizes the necessity for the practitioner, when called on to treat a case, to make himself acquainted with its individual character. Successful treatment often depends upon correct diagnosis. To a man whose mind is haunted with the dread of sudden death, the assurance that the condition is functional and curable comes as a reprieve, and may be the one thing necessary to effect a cure.

At the onset the existence of any constitutional disease, such as syphilis, gout, or diabetes, and the presence or absence of valvular lesions, should be determined. While emphasizing the importance of avoiding mental worry, and of taking exercise within strict limits, Dr. Osler thinks that in a majority of cases it is unnecessary for the patient to give up business altogether. Literature abounds with examples of men who, like John Hunter, have accomplished the best work of their lives after the onset of angina. Diet is in many cases the most important point in the treatment. The subjects of angina are often men with large appetites, accustomed to eat freely of rich and strong foods. The amount taken by many people above forty years of age is far too great and the meals should be limited both in quantity and quality. All foods favouring fermentation and therefore flatulence, should be especially avoided. In this matter of diet, the patient himself ought to be consulted. Smollett makes one of his characters, Matt. Bramble, say in *Humphry Clinker*, "For my own part, I have had an hospital these fourteen years within myself, and studied my own case with the most painful attention, consequently may be supposed to know something of the matter." We are too apt to forget this. An intelligent patient should be able to tell you just what articles of food give rise to flatulence. The obese, flabby subjects of angina, and those with weak heart and arterio-sclerosis are, in the writer's experience, most prone to suffer from this important factor in the causation of the attacks. A few doses of blue mass or an occasional saline purge may prove a corrective, and keep this troublesome condition in check. Sometimes stimulants are of service, and in other cases the various intestinal disinfectants may be used.

Of constitutional conditions underlying angina pectoris, syphilis and gout are the most important, and call for vigorous measures.

The fact is emphasized that in a large proportion of cases, remedies which influence arterial function and arterial nutrition are indicated. The use of the iodides of potassium and sodium in this disorder has been warmly advocated by Huchard, who states that of eighty patients with organic angina treated thoroughly by these drugs, twenty-two recovered, forty-three were greatly benefited, and fifteen died. The iodides appear to exert a beneficial effect in checking or modifying the progress of arterio-sclerosis, and in lowering the blood pressure. They may influence also arterial pain. In the treatment of aneurysm of the aorta by means of potassium iodide, the relief of pain is one of the most striking effects.

Dr. Osler says that while his experience has scarcely been so favourable as Huchard's, he can testify to the great relief which has followed its use in angina in many cases. In a few cases an apparent cure has resulted. The drug should be given in doses of ten or fifteen grains three times a day. Should it disagree, the sodium salt may be substituted. Larger doses are not often necessary. If intolerance develops, the administration should be stopped for a week, and only begin in smaller doses. The success in the treatment will depend upon the perseverance with which it is taken Huchard says that the drug should be taken for a period of two to four years in daily doses of one to three grammes until all symptoms of angina have disappeared ; a permanent and definite recovery is not obtainable until after many years of treatment. Reasonable caution, however, must be employed, and iodides should not be given in those cases where we have to deal with advanced arterial degeneration, a dilated heart, and signs of interstitial nephritis. Those who stand the treatment best are the robust middle aged men, in whom angina is the only symptom.

The nitrites are also of much value in hypertension and angina. The nitrite of amyl may be employed in the paroxysm ; but nitroglycerin should be given regularly in all cases where the tension is persistently high. Care must be taken to ensure that the drug is freshly prepared. The tablets containing one one-hundredth of a grain are, as a rule, reliable. At the beginning of a course one may be given three times a day, but the dose may be increased gradually until the patient takes four or five three times a day. Dr. Osler thinks that failure is sometimes due to not giving the drug in large enough doses. Considering the very evanescent action of the drug, our own feeling would be to increase the frequency rather than the size of the dose. Dr. Osler says of it; " I have never seen it do any harm. The extreme flushing and the throbbing headache give reliable indications when the limit has been reached. I have given as much as thirty minims of the one per cent. solution, three times a day, to a case of chronic arterio-sclerosis, without any disturbance." The nitrate of sodium, recommended by Hay, may also be employed in doses of five to ten grains three times a day.

Among other remedies arsenic is sometimes of much value. Balfour advises it particularly in the weak heart of elderly people, when associated with pain of any kind. In cases of feeble heart with anæmia, iron and strychnine are of value, and may sometimes be associated with the arsenic.

For the paroxysm itself there are three remedies. Nitrite of amyl, two to five minims used by inhalation, either on a handkerchief or from cotton wool placed at the bottom of a wineglass, gives prompt relief in certain cases. But too much must not be expected of it. It is singularly uncertain. While affording prompt relief in some cases, in others it seems quite inert. In those cases where it fails to relieve the pain, an injection of a quarter of a grain of morphine should be given hypodermically, and repeated in half or three-quarters of an hour if the patient is not relieved. There appears to be a remarkable tolerance of this drug in some cases. In one of Dr. Osler's patients, five grains of morphine given hyperdermically and by the mouth between 10 p.m. at night and 1 p.m. on the following day, relieved the pain, but failed to produce sleep. In some cases a small dose given at the first indication of the attack checks it at once. In any paroxysm of great intensity while waiting for the nitrite of amyl or morphine to take effect, chloroform may be employed on a handkerchief. Balfour recommends that it be poured on a sponge in a smelling bottle and the patient told to breathe it through the nose as deeply as possible. Relief is obtained in a minute or two, and as the patient comes under the influence of the drug, the bottle drops from his hand, and in this way danger from overdose is avoided. Chloroform acts much more promptly, and is much pleasanter to take than ether, and Dr. Osler has never seen any dangerous effects from its use, even in persons with weak heart action.

For the syncope of serious attacks, the aromatic spirits of ammonia, with Hoffmann's anodyne and brandy, may be given by the mouth, or ether or camphor by hypodermic injection. For the dilatation and cardiac weakness, which sometimes follow the attack, nitroglycerine with strong friction to the limbs may favour the circulation at the periphery, while digitalis or digitalin may be given to stimulate the heart's action Caffeine and camphor may also be employed. If all these measures seem futile, Dr. Osler would not hesitate to employ puncture of the heart, a proceeding which may arouse to quite vigorous action a dilated and paretic organ. Instances, he says, are on record, notably the case of Sloane (*Edinburgh Medical Journal*, Vol XL.,) in which puncture of the heart with a needle, driven firmly into the ventricle, has aroused the flagging action without apparently doing the slightest injury.

For the condition of chronic *état de mal angineux*, in which for many days or weeks the patient has recurring attacks with cardiac asthma and feebleness of the circulation, our resources will be taxed to the uttermost. Full doses of strychnine hypodermically may be employed. The bowels should be kept freely opened, and flying blisters to the præcordia and to the bases of the lungs may sometimes prove of service.

A. D. Blackader.

Obstetrics and Diseases of Infants.

UNDER THE CHARGE OF J. C. CAMERON.

Treatment of Pruritus Vulvæ.

P. RUGE. "Zur Therapie des Pruritus Vulvæ."—*Zeitschrift für Geburtshülfe and Gynakologie*, Band. XXXIV., S. 355.

Few diseases of pregnancy cause greater inconvenience and discomfort to the patient and are more rebellious to treatment than pruritus. It may be merely the local expression of a general process such as diabetes, rheumatism, albuminuria, tuberculosis, neurasthenia, &c., when local treatment will fail and relief can be obtained only by treating the underlying general condition—or again, pruritus may be caused directly by some local pathological condition of the genitals, such as herpes, vaginitis, metritis, cancer of the uterus, &c.; a careful local examination should reveal the cause of trouble and indicate the proper line of treatment. Some obstetricians describe an *essential* or *idiopathic* pruritus without apparent local causation which they refer to central causes. Sänger does not admit the evidence of essential pruritus, but affirms the existence always of some primary disease of the vulva, which secondarily affects the nerve endings, and he holds that in most cases direct external treatment will effect a cure, although in some obstinate cases resection of certain portions may be necessary. Ruge says that the essential part of the local treatment is thorough disinfection of both vulva and vagina. It should be done as carefully as if a vaginal operation were to be performed. Ruge washes, soaps and then disinfects with sublimate solution, the vulva, vagina and cervix till all pathogenic micro-organisms have been removed, he then applies to the vulva an ointment of carbolated vaseline (3 to 4 per cent) The obstetrician should carry out this local treatment himself, using his fingers, but not brushes or instruments which might cause fresh lesions. Ruge says that the positive and immediate results are in most cases surprising. In severe as well as in mild cases, even when complicated with deep and extensive ulceration, cure is rapid. For some years he has treated systematically in this manner all cases of pruritus, whether leucorrhœa was present or not, with surprising results. Ruge's paper was read before the Obstetrical Society of Berlin, and in the discussion which followed Martin, Flaischlen, Brose

Bodenstein and others corroborated his statements and for the most part coincided with his views.

Fibromyomata and Conception.

G. PUJOL. "Fibro-myomes utérins et conception."—*Arch. de Gyn. et de Tocologie*, Oct., 1896, p. 720.

Most authorities agree that uterine fibromyomata cause sterility, if not *absolute* as affirmed by Louis, at least *relative.* In other words myomatous women are less fruitful than the average. The collected statistics of a number of observers give a total of 2,050 women with uterine fibromyomata ; 620 were sterile, (1 in 3.14), whereas the average sterility in other women is only 1 in 8. Fibromata of the cervix have less harmful effect than those of the corpus. Recognising the coincidence of sterility and uterine fibromyomata, some observers (Virchow, Scanzoni, Spiegelberg, Bayle, &c.) have reversed the proposition and assert that sterilty is the cause of fibromyomata. This opinion does not seem to be supported by the evidence. Recently Hofmeier has opposed the commonly accepted view that these tumours cause sterility, and seeks to prove by statistics that there is no diminution in reproductive power in such cases, but rather an increase. Kleinwachter supports this view. The fact remains, however, that diminution in fecundity is noted in most of the statistics and that the same thing has been observed by veterinary surgeons. It is claimed that the frequent uterine deviations and the inflammatory changes set up by the tumours (metritis, endometritis, vulvovaginitis) account for the sterility. Moreover experience has shown that women with uterine fibromyomata have not unfrequently become pregnant shortly after the removal of the tumour, although sterile for years previously.

Amniotic Infection after Rupture of the Membranes.

L. DEMELIN. "Des infections amniotiques qui se produisent après la rupture des membranes."—*Archives de Gyn. et de Tocol*, Sept. 1896. p. 679.

When the membranes rupture, the liquor amnii generally remains aseptic, because the presenting part of the fœtus usually presses down upon the cervical opening like a ball valve, and the microbes in the cervix and upper part of the vagina are generally non-pathogenic. But amniotic infection occasionally happens and is attributable to one of the following causes :

(1) A long interval between rupture of the membranes and the conclusion of labour (from 2 to 5 days).

(2) The long duration of labour. When the membranes rupture several days before labour, but confinement is completed rapidly after the pains set in, there is less danger than when labour lasts a long time.

(3) Repeated vaginal examinations after rupture of the membranes or self infection by introducing unclean fingers into the vagina.

(4) Infected clothing, dressings, sponges, douche-nozzles, instruments, bed-pans, &c.

(5) Face presentations and those which remain high, thereby favouring the entrance of air into the amniotic cavity.

(6) Certain pathological conditions, especially those accompanied with putridity, such as vegetations of vulva and vagina, vaginitis, leucorrhœa, cancer of the cervix, &c.

(7) Death of the fœtus, or death of one fœtus in a twin pregnancy. Before the fœtus perishes, meconium is generally discharged into the liquor amnii, which favours its subsequent infection.

Consequences of Amniotic Infection. The liquor amnii becomes modified in its odour and colour. The fœtor may be more or less marked and the colour may be normal, greenish or blackish. In grave cases, there is elevation of temperature and constitutional disturbance and the puerperium will have septic complications in most cases. There may be physometra, even though the fœtal heart is heard. The child may scarcely suffer and may be born alive and in good condition, or its heart beats may become irregular and feeble and it may perish. The placenta may be fœtid and often the fœtal surface and the membranes are yellowish, dirty, opaque, sometimes covered with a layer of pus.

Consequences of Amniotic Infection for the Newborn Child In the graver forms, the child may be born in a state of apparent death; it may be fœtid, its body covered with a yellow purulent coating composed of a mixture of sebum and putrid liquor amnii, with streaks of meconium here and there. The cord is a dirty greenish yellow. There is complete muscular inertia, the eyes closed, chest motionless, heart beating slowly and feebly, greenish yellow mucus exuding from mouth and nostrils. Sometimes the condition is less serious and the child can be resuscitated but dies in a few hours. In still milder cases, the child may be resuscitated and seem to be doing well, but at the end of three or four days certain conditions may arise which lead to a fatal termination. The commonest of these are, cutaneous erythema, multiple abscesses, umbilical infection and suppuration, hepatitis, digestive disorders, vomiting, diarrhœa, malnutrition, affections of the respiratory tract such as simple or suppurative rhinitis and broncho-pneumonia with cyanosis. These affections are often accompanied by fever, and sometimes by nerve symptoms and convulsions; whenever any of these complications has fairly set in the child usually succumbs.

Treatment.—When the membranes rupture prematurely, amniotic infection should be prevented if possible, by rest in bed in the horizontal position, genital asepsis, and covering the vulva with a large sterilised tampon (placed *upon* the vulva. not *in* it). The vagina should not be repeatedly douched. nor tamponed; one thorough antiseptic vaginal douche at the outset is sufficient. Vaginal examinations should be made as seldom as possible. Rapid delivery will give the best chance to both mother and child. Artificial dilatation of the cervix by means of a Champetier de Ribes bag, followed by forceps or version is the best treatment. Dührssen's multiple incisions of the cervix are not to be recommended. When the head is engaged, the Champetier bag may prove harmful by pushing back the head; Tarnier's dilator is then preferable. When the child is delivered, it should be washed several times, the throat and nose cleaned and irrigated with boiled water, an enema given and in fact all precautions taken to remove septic matters as far as possible. If subsequent complications occur, they should be treated promptly.

Should Albuminuric Women Nurse Their Children?

GAMULIN. "L'allaitement chez les albuminuriques."—*Arch. de Gyn. et de Tocologie*, November, 1896, p. 743.

Can or should a woman nurse her child if she has suffered from albuminuria during pregnancy, and is obliged to continue the milk treatment during the puerperium on account of the persistence of albumin in her urine? Most physicians forbid nursing under such circumstances on the ground that both mother and child would suffer. The mother would be enfeebled and albuminuria would not disappear so rapidly, and the child would probably suffer more or less from malnutrition. Gamulin opposes this view, and proves from the statistics of the Baudelocque Clinic where the mothers nurse their own children, that no evil results have followed, but, on the contrary, the mothers improved in health, and the albuminuria disappeared completely while they were upon a rigid milk diet. Their children thrived and grew, though not so fast as those of quite healthy mothers. The ultimate test of a woman's efficiency as a nurse is the increase in weight of the child. Tarnier has laid down the rule that a daily increase in weight of 20 grammes is the minimum with which we should be satisfied. The average daily gain has been variously estimated by different observers. Bouchard makes it 25 grammes, Bidet 28, Winckel 35, Tarnier and Chantreuil averaging the averages of other observers place it at 30 grammes. Winckel has observed that more than 50 per cent. of new born children regain their birth weight by the tenth day. Of the children of albuminurics in the Baudelocque Clinic, only one in five did not gain 20 grammes per diem, and some reached 35 grammes ; two-thirds regained their birth weight by the tenth day, and more than one-half of them by the seventh day. Albumin had disappeared entirely from the urine, or only a trace remained when the mothers left the clinic ; in two cases it had increased and in five it remained stationary. From the consideration of these statistics, Gamulin concludes that the children of albuminurics nursed by their own mothers develop and grow as well as other infants, and that the mothers themselves, though kept on a strict milk diet, suffer no ill-effects from nursing their children. He believes, therefore, that every albuminuric mother can and should nurse her child ; only in the rare cases when the albumin remains stationary or increases, should nursing be stopped.

J. C. Cameron

Canadian Medical Literature.

UNDER THE CHARGE OF KENNETH CAMERON.

[The editors will be glad to receive any reprints, monographs, etc., by Canadian writers, on medical or allied subjects (including Canadian work published in other countries) for notice in this department of the JOURNAL. Such reprints should preferably be addressed to Dr. Kenneth Cameron 903 Dorchester street, Montreal.]

PERIODICALS.

FEBRUARY, 1897.

THE CANADIAN PRACTITIONER.

The phrenology of Gall, and Flechsig's doctrine of associated centres in the cerebrum—Lewellys F. Barker, Baltimore, p. 79.

Lacerated perineal wound; death from sepsis; use of antistreptococcic serum—A. Primrose, Toronto, p. 109.

THE DOMINION MEDICAL MONTHLY AND ONTARIO MEDICAL JOURNAL.

Osteosarcoma—C. R. Charteris, Chatham, Ont., p. 121.

Colles' fracture—C. M. Stockwell, Walkerville, Ont., p. 123.

CANADA MEDICAL RECORD.

Nursing the insane—J. V. Anglin, Montreal, p. 229.

Diplo-streptococcic puerperal infection treated with Marmorek's serum—A. J. Richer, Montreal, p. 245.

THE MARITIME MEDICAL NEWS.

Dysmenorrhœa—J. Clarence Webster, Montreal, p. 41.

Some practical points in the application of plaster-of-Paris jackets—M. A. B. Smith, Dartmouth, N.S., p. 56.

Case of malformation of fœtus—T. C. Lockwood, Lockeport, N.S., p. 59.

L'UNION MÉDICALE DU CANADA.

Traumatisme grave de l'orbite ayant intéressé le sinus maxillaire, ethmoïdal et sphénoïdal—A. A. Foucher, Montréal, p. 65.

Appendicitomie—A. Charbonneau, Ogdensburg, N.Y., p. 68.

Un cas de thyroïdectomie partielle—O. F. Mercier, Montreal, p. 71.

De l'emploi des cultures atténuées comme moyen d'éviter les pseudo-réactions dans de séro-diagnostic de la fièvre typhoïde par la méthode du sang desséché—Wyatt Johnston, Montreal, p, 74.

LA CLINIQUE.

Plaidoyer en faveur du traitement rationnel des douleurs pelviennes chez la femme—J. Clarence Webster, Montreal, p. 255.

MARCH, 1897.

THE CANADA LANCET.

The bacteriological diagnosis of diphtheria—Shuttleworth, Toronto, p. 323.

On treatment of dysmenorrhœa—A. L. Smith, Montreal, p. 329.

THE CANADIAN JOURNAL OF MEDICINE AND SURGERY.

Notes on the symptomatology and diagnosis of sensory, motor, or trophic paralysis, consecutive to lesions of contiguous parts, resulting from violence—Thomas H. Manley, New York, p. 93.

Chorea: treatment by training—B. E. McKenzie and H. P. H. Galloway Toronto, p. 99.

THE MARITIME MEDICAL NEWS.

The treatment of typhoid fever—G. C. VanWart, Fredericton, N.B., p. 81.
Ovariotomy after rupture of cyst—Edw. Farrell, Halifax, N.S., p. 85.
A case of Friedreich's disease—F. S. Kinsman, Digby, N.S., and G. D. Turnbull, Arcadia N.S., p. 88.
A case of imperforate urethra—W. G. Putnam, Yarmouth, N.S., p. 91.

THE DOMINION MEDICAL MONTHLY AND ONTARIO MEDICAL JOURNAL.

The relation of the physician to the public—A. McLean, Sarnia, Ont., p. 217.
Cases in practice—Radical cure of inguinal hernia in a child five and a half months old—Ernest Hall, Victoria, B.C., p. 224.

LA CLINIQUE.

No original articles.

Kenneth Cameron.

Reviews and Notices of Books.

The Practice of Medicine. A text-book for Practitioners and Students with Special Reference to Diagnosis and Treatment. By JAMES TYSON, M.D., Professor of Clinical Medicine in the University of Pennsylvania, and Physician to the Hospital of the University; Physician to the Philadelphia Hospital, &c. Philadelphia: P. Blakiston & Co., 1896.

This, the most recent addition to the already large list of text-books on the practice of medicine, contains nearly twelve hundred pages. The author who has for many years occupied a prominent position as a Clinician in the University of Pennsylvania is already well known to practitioners and students in the English speaking world as the author of two excellent manuals, one dealing with the urine, the other with physical diagnosis. The volume under consideration has been the work of several years labour.

The first section deals with the infectious diseases, typhoid fever being first considered. It is hardly necessary to add that Dr. Tyson is an advocate of the cold bath treatment of this disease. What a striking contrast there is in respect to this method of dealing with typhoid fever between American and English authors. The former, hardly without an exception are thorough advocates of the measure, while the latter have not as yet seen their way to consider it a measure which is necessary to give a full description of, let alone advocate it.

For the treatment of pneumonia, Dr. Tyson is an advocate for blood letting, in the early stages in many cases, except those of pronounced adynamia. He says that the indications for blood letting are first: "great dyspnœa; second, full bounding pulse; and third, sharp, pleuritic pain. The relief to all of these symptoms is often magical." He recommends that at least twenty ounces should be withdrawn, but not the quantity of blood so much as relief to the symptoms should be the sign to stop the bleeding. He considers that the same results may be obtained by wet cupping, provided a sufficient amount of blood is withdrawn, but cupping although appearingly less formidable, causes the patient more distress.

We are pleased to see that Dr. Tyson gives the weight of his authority against the employment of cardiac depressants. About veratrum viride he writes: "I have never felt comfortable in relying upon it." There is surely an increasing loss of faith in the usefulness of such agents, powerful they no doubt are, but who can be sure that in a pneumonic patient they are not more likely to do harm than good.

The author thinks a large blister is useful in cases of delayed resolution.

Strychnine and alcoholic stimulants are considered to be the agents, on the whole, the most useful, but as he says, "a fundamental principle which experience has established is that no single plan of treatment dare be recommended for pneumonia, but that each case is a law unto itself," should always be remembered.

Our space forbids us dealing in any more details. We have much pleasure in recommending the work.

It is as far as we can judge an able and trustworthy guide for the practitioner and student. It is worthy of taking a high place among the text-books published in the English language.

The illustrations are numerous and well executed. The publishers have certainly done their part of the work in a highly creditable manner.

J. S.

Anomalies and Curiosities of Medicine. GEORGE M. GOULD, A.M., M D., and WALTER L. PYLE, A.M., M.D. Imp. 8vo. pp. 968, with 295 illustrations in the text and 12 half-tone and coloured plates. Philadelphia, 1897: W. B. Saunders, 925 Walnut Street.[1]

It is somewhat strange that great as is the interest in rare and curious medical cases and in anomalies of development, until the appearance of this volume, there has been published no encyclopædic collection of rare and extraordinary cases, or of the most striking instances of abnormality. A possible reason may be in the fact that any such full collection must largely deal both with anomalies of the genitalia and with perversions or diseased conditions of the generative functions, for of all departures from the normal these assuredly are in general estimation the most 'curious.' Whoever therefore essays to treat this subject is in danger of putting out a book which will appeal to an audience, outside our own profession, that is repugnant and the more a man is a true student, the more capable he is of searching through the medical literature of all ages and of compiling a satisfactory collection of strange cases, the more is he likely to shrink from the possibility of ministering in the main to depraved appetites.

Nevertheless the need has been so great for some convenient work of reference in which to find recorded extreme and unusual cases comparable with those one occasionally comes across in practice that we can only be grateful to Drs. Gould and Pyle that they have essayed to publish this work. The amount of research involved has been enormous, and they and their publishers are to be congratulated upon producing so valuable and handsome a work, containing such a mass of information out of the common. As the authors state in their preface, "to know extremes gives directly some knowledge of means, and by implication and inference it frequently does more. Remarkable injuries illustrate to what extent tissues and organs may be damaged without resultant death, and thus the surgeon is encouraged to proceed to his operation with greater confidence and some definite knowledge as to the issue. If a mad cow may blindly play the part of a successful obstetrician with her horns, certainly a skilled surgeon may hazard entering the womb with his knife. If large portions of an organ—the lung, a kidney, parts of the liver, or the brain itself—may be lost by accident and the patient still live, the physician is taught the lessonof *nil desperandum*." But more especially, perhaps, these examples of uncommon conditions have a medico-legal interest, for he is the best expert witness who knows best the limits of the possible, and looking through the pages of this work it appears to me that those parts which have a medico-legal bearing are the fullest and most valuable. Indeed much more might with advantage have been included that is of especial value to the physician and surgeon, pure and simple; many rare conditions and rare symptoms might be quoted which find no place in these pages. It must however be admitted that to collect and record extreme instances of each condition of disease would be to enter upon a wholly neglected field and would be a Herculean task. Evidently the authors regard what they have thus far accomplished as only a beginning and they invite communications upon rarities not here recorded.

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[1] Price $6.00 cloth, $7.00 half-morocco. Sold only by subscription.

Altogether so far as it extends the work is in itself a great advance and is invaluable, and large as it is we sincerely hope that it will undergo future great extension. J. G. A.

Lectures on Renal and Urinary Diseases. By ROBT. SAUNDBY, M.D., F.R.C.P. Second edition, with numerous illustrations. Bristol: John Wright & Co.: London: Simpkin, Marshall & Co., 1896, pp. 434 8vo.

Dr. Saundby's writings upon Bright's Disease and upon Diabetes, are so well known and so useful as a comprehensive study of these conditions, that we welcome this new edition in which they are re-published in a single volume. They have been carefully revised, new matter has been added, among this a section upon miscellaneous affections of the kidney, which makes the book very complete as a text book upon renal and urinary diseases.

It is to be remembered that this work is a republication in a single volume, of lectures upon Bright's disease and upon Diabetes. It is in connection with these two conditions that the work is fullest. But reading over the book we find, that there is very little of importance bearing upon diseases of the kidney that does not receive a clear and thoughtful treatment. Add to this, that not only are we given Dr. Saundby's own extensive observations upon pathological conditions of the organ with numerous histories of illustrative cases, but that the intimate acquaintance with the literature on the subject which was shown in the original lectures, is if possible still more evident, and throughout has been brought down to within the last few months.

The form of the work, the printing and the illustrations, which include numerous coloured diagrams of associated retinal conditions are throughout excellent. While personally we may not wholly agree with Dr. Saundby's conclusions as to the pathology of Diabetes, we cannot but acknowledge that he has throughout most conscientiously given the diverse opinions and theories of the numerous writers upon this subject, and we truly acknowledge that this want of complete agreement between ourselves and Dr. Saundby in the matter is by no means an indication of any weakness in the work, for it is notorious that no two men at the present time have identical views upon the subject. J. G. A.

Practical Diagnosis: The Use of Symptoms in the Diagnosis of Disease. By H. A. HARE, M.D., B.Sc., Professor of Therapeutics in Jefferson Medical College of Philadelphia; Physician to the Jefferson Medical College Hospital. Illustrated with 191 engravings and 13 coloured plates. Philadelphia and New York: Lea Brothers & Co., 1896.

The method adopted by the author in this volume is entirely different from that usually followed. The prominent symptoms of the various diseases are fully described and under the heading of each is a list of the possible diseases capable of giving rise to such symptoms. Thus, under the head of vomiting, we have first an account of the symptom, its different forms, its various causes, and the differential diagnosis between them. In many, but not in all respects such a method has distinct advantages. It appears to be a more natural and simpler way of arriving at a diagnosis.

Dr. Hare has certainly given us a valuable work, and he has followed his plan throughout with great care and ability. The work contains numerous new illustrations. J. S.

Autoscopy of the Larynx and Trachea (direct examination without mirror), by ALFRED KIRSTEIN, M.D., Berlin; authorized translation (altered, enlarged and revised by the author), by MAX THORNER, A.M., M.D., Cincinnati, O., with twelve illustrations. Philadelphia: The F. A. Davis Co., 1897.

This work is mainly a translation by Dr. Max Thorner, of Cincinnati, of Dr. Kirstein's already well-known monograph on the autoscopy of the larynx and trachea.

There is probably a great future for autoscopy in laryngeal work, but still certain anatomical obstacles are bound to occur in a number of cases which can be only overcome by the mirror.

In suitable cases, after once the knack has been learned, it does undoubtedly surpass the mirror laryngoscopy.

The viewing of the larynx directly with the autoscope instead of by reflected light, is itself a great advance and operative technique is made much more accurate and easy.

The difficulty is, as Kirstein remarks, to secure the knack of using the autoscope rapidly, and yet painlessly.

Another drawback is that the surgeon has to get the patient's breath full in the face.

Dr. Kirstein himself does not claim everything for his autoscope, but yet holds it is capable of still further development.

If only a very little of what Dr. Kirstein claims for it is correct, no throat surgeon should fail to have one.

The book itself is well printed and illustrated and the directions are very clear. J. W. S.

Transactions of the American Ophthalmological Society,

32nd Annual Meeting, New London, Conn., 1896. Hartford: Published by the Society, 1897.

The Transactions of the American Ophthalmological Society for 1896, are just to hand and supply some interesting reading.

The size of the volume is above the average, but although increased in bulk the contributions are hardly up to a very high standard.

It may be said to consist almost entirely of a long series of case reports. These are very interesting, true, but in a large flourishing Society like the American Ophthalmological, one can be excused for looking for original work and something more than case reports.

Orbital and intraocular tumours are in strong evidence.

Dr. C. S. Bull's paper on the course and prognosis of orbital tumours is very instructive. Dr. Knapp reports a rare case of multiple intracranial and orbital osteosarcomata.

Dr. Emerson's production of a patient with double optic neuritis, likely due to intracranial aneurism is also very interesting.

Two cases are mentioned in which the X rays were used to locate a metal foreign body in the eye.

Dr. Wadsworth, of Boston, reported a patient suffering from embolism of the central artery of the retina, with retained central vision, likely due to the macula drawing a part of its blood supply in this case from an abnormal celio-retinal artery, which was clearly visible with the ophthalmoscope.

Dr. P. C. Harlan deals with the retention of the pupillary light reflex in absolute blindness, the cause of the blindness necessarily lying in the cornea, beyond the pupillary centre, at the base.

The above will suffice to show the style of last year's transactions, which are interesting and instructive, but rather lacking in original work or research. J. W. S.

The Nursing World Bed-Side Record.

We have received from the Imperial Granum Company several copies of this "Bed-Side Record." A short time ago the "Nursing World" offered prizes for the best method of taking notes of cases. As none of the forms suggested by the competing nurses were quite satisfactory, the enterprising editor, Dr. J. Ed. Brown, selected the best points from all the designs which were submitted and the result is the chart before us. It is so comprehensive that a detailed description would require more space than we have at our disposal, but the Imperial Granum Co. will send copies to any physician or nurse desiring to use them. As careful note taking is to be encouraged, we would advise every practising physician to at least make a trial of this Record. Each book contains 42 pages for the record of symptoms, etc., besides temperature charts for six weeks, and blank pages for the record of prescriptions, previous and subsequent history of the case, and memoranda.

Transactions of the Medical and Chirurgical Society of the State of Maryland. Ninety-eighth Annual Session held at Baltimore, April, 1896.

As usual this report contains some interesting reading. The Presidents address, by Charles G. Hill, on the effect of thyroid feeding on the insane, is an account of the results obtained in forty cases treated by this method, with the deductions which he has drawn from them. The annual address, on the relation of disease and recovery to therapeutics, is by Solomon Solis Cohen, and in it he points out the need for rational therapeutics. The appendix contains an address by James R. Chadwick on Medical Libraries in which he gives statistics of the growth of these libraries in the United States. This, with the reports of the committees, completes the volume.

Society Proceedings.

Stated Meeting December 31st, 1896.

GEORGE WILKINS, M.D., PRESIDENT IN THE CHAIR.

A Cardiac Case for Diagnosis.

Dr. W. F. HAMILTON exhibited a boy aged ten years, the subject of a cardiac lesion. He read the history of the case, demonstrating the physical signs present, and pointed out the difficulty of classifying it among any of the recognised heart lesions. The case was examined thoroughly by the members present, but no one was able to give a satisfactory solution of the problem.

A Case of Vicarious Labour Pains.

Dr. WYATT JOHNSTON read for Dr. D. D. MACTAGGART and himself a paper on this subject, which will appear later.

Associations of Tonsillitis and Diphtheria.

Dr. J. C. CAMERON related this case, a report of which appeared in the December number of the JOURNAL.

Dr. C. W. WILSON related the history of two of the cases referred to by Dr. Johnston. The first was a case of hernia, and was seen on the second day after tonsillitis had developed. The follicles were filled with a dirty grey secretion which could be rubbed off and was discrete, not in patches. A swab was taken and sent to Dr. Johnston who found no diphtheria bacilli microscopically, but next morning the growth upon the culture medium showed diphtheria bacilli distinctly. Three cc., of Schering's antitoxin were injected and nothing further developed. Two days later, although no constitutional symptoms were present, another swab was submitted and diphtheria bacilli found once more, and four days later again they had disappeared. A case of diphtheria had occurred two weeks previously in the house of a cousin, where frequent visits were interchanged.

The second case occurred in the Montreal General Hospital. A child suffering from hip-joint disease developed a tonsillitis with acute symptoms. A swab was submitted and a negative report received. The tonsillitis subsided; but a second swab, taken two days later, showed diphtheria and the child was sent to the Civic Hospital to avoid causing infection to the other occupants of the ward and the disease has had an uneventful course.

Dr. A. W. HALDIMAND referred to a case in which there was a distinct membrane on the tonsils, soft palate and pharynx, and which he immediately diagnosed as diphtheria. A culture was submitted to Dr. Johnston who reported that no bacilli were present. The membrane gradually disappeared under the use of peroxide of hydrogen spray. From a second swab a report was received of "present (?)"

Dr. G. T. Ross thought the subject was of great practical importance and that Dr. Johnston's statements supported the progressive infection theory of diphtheria put forth by several authors. They considered that many cases were of the nature of ordinary angina, infective, but containing no true bacilli, and that later true diphtheria was engrafted upon them, perhaps a week after the appearance of the tonsillitis. He alluded to an epidemic which had been recently reported of 100 cases of sore throat, in a school of 300 pupils, where there were no symptoms of diphtheria, but later on a case of diphtheria came in contact with one of these and the disease developed. He asked if Dr. Johnston had done any work on the microbic theory of rheumatism. This disease was said by some writers to develop from tonsillitis by the lymphatics supplying the tonsils, conducting the poison into the system.

Dr. WYATT JOHNSTON in reply said he did not consider it necessary to isolate cases in which only a few bacilli were found. It was, however, a good plan to give a dose of antitoxin. He had had no experience of rheumatic tonsillitis.

The Quantitative Estimation of the Serum Reaction by the Dried-blood Method.

Dr. WYATT JOHNSTON read a report of this method by Dr. D. D. MACTAGGART and himself. (See page 709 of the March number.)

Stated Meeting, January 15th, 1897.

JAS. BELL, M.D., IN THE CHAIR.

"Tic Convulsif."

Dr. F. G. FINLEY exhibited two brothers suffering from this malady. (See page 718 of the March number.)

Dr. W. F. HAMILTON said that these patients reminded him of a case which was a puzzle in diagnosis. The first case shown by Dr. Finley illustrated the character of the movements in his own case; there were increased and spasmodic movements on voluntary motion, but, in addition, the trunk muscles were involved as well as the diaphragm and other respiratory muscles, causing a quick expiratory puff at times during the height of a seizure. He had classified it as one of paramyoclonus multiplex. The disease dated from the age of three years to the present age of twenty-three. There were no mental changes or epileptiform seizures, and the family was not one showing neurpathic tendencies.

Dr. W. E. DEEKS suggested that the movements might be due to a loss by control of the cerebral centres over the lower or spinal cord centres, the result being that the latter acted in an irregular manner; the cerebral centres initiating movements which they could not control.

Renal Calculi.

Dr. J. B. MCCONNELL read the medical and Dr. G. E. ARMSTRONG the surgical report of this case. Will be published next month.

Renal and Vesical Calculi.

Dr. JAS. BELL exhibited the specimens. (See page 791.)

Dr. LAPTHORN SMITH asked Dr. McConnell if he considered the disease preventable, and if he knew whether the patient was in the habit of abstaining from water before the disease began. Questioning whether the case could have been one of traumatic delirium, he referred to one occurring in his own practice following a total hysterectomy which he had attributed however to the large quantity of iodoform in the gauze packing.

He asked Dr. Bell if he did not think it would be better to operate on the kidney through the abdomen as he had himself extirpated a kidney by this method. He thought it was of the greatest advantage before removing one kidney to feel the other, and also to see that it contained no stones. He felt that it was only prejudice that favoured the operation in the back. The latter's only advantage was from the better drainage secured. He thought the fear of infecting the peritoneal cavity an ephemeral one, as the kidney which he had removed contained several quarts of pus and many calculi and he had had no difficulty in disinfecting the peritoneal cavity; the same was true after the rupture of stinking pus-tubes.

Dr. MCCONNELL in reply to Dr. Smith, said that he was quite unable to give any directions as to how one might prevent the formation of stone. He could not suggest keeping the urine either acid or alkaline, as calculi formed under both conditions. Of the patient's previous habits he knew nothing. He was very temperate, took good care of himself, but indulged a great deal in Turkish baths. He was inclined to attribute the final event to the condition of the kidneys to a large extent, and thought that chloroform would have been preferable to ether as the anæsthetic.

Dr. ARMSTRONG said that the diagnosis had been made by Dr. McConnell. The man was failing in health and passing pus and blood in the urine after exercise. This pointed directly to the kidneys. He had been in doubt of finding stone, as he did not understand how a calculus could be present without producing pain.

The question of abdominal section was important, and a great deal might be said in its favour in cases of contemplated nephrectomy. Exploring through the front, too, would establish the presence of a second kidney or of any contraction of the ureter.

He felt that the impression that ether was likely to have an injurious effect upon the kidneys was not well founded. The only evidence he had seen of the relative effects of chloroform and ether on the kidney was in Prof. Schede's Clinic, where upwards of a hundred cases of each had been examined before and after anæsthesia, and the results were in favour of ether as being the less injurious.

Dr. Bell's cases opened up a very important field for discussion, namely. the treatment of vesical calculi in old men with large prostates. He personally preferred the crushing operation, as the statistics were far ahead of the other methods.

The modern operation of litholopaxy gave most satisfactory results. It was true, stones were sometimes reformed in the bladder after litholopaxy, but they sometimes increased after perineal and suprapubic lithotomy. Mr. Reginald Harrison was now suggesting that in suitable cases double vasectomy should be performed some time previous to the crushing of the stone. By this means he sought to bring about an atrophy of the prostate and thus facilitate the litholopaxy.

Dr. James Bell, in reply, said he thought there were many obvious reasons for not operating in pyonephrosis through the abdominal wall, but for nephrectomy it was otherwise. It was important to verify the existence of the second kidney, and it offered greater facilities for dealing with the pedicle, especially on the right side, where the renal veins were short and often difficult to secure. In comparing pus from the kidneys with that from stinking pus-tubes one must remember that pus differed in virulence. Thus, pus from an appendix abscess was much more dangerous than that from the Fallopian tubes, and probably kidney pus was also more virulent; consequently, the escape of urine and pus into the abdominal cavity would be a very serious complication. He referred to the frequency with which stone occurred in both kidneys at once, and to the extreme difficulty of making a definite diagnosis, many cases with hæmaturia giving no clue as to which kidney contained the stone.

The statement that ether was injurious in kidney cases, Dr. Bell looked upon as simply and purely a libel upon ether. Wood and others, during the last few years, had proved the contrary. With reference to the question of crushing, his reason for not doing so in the young man was that he was suffering from cystitis and had had urethral fever every time an instrument had been passed. Besides this, he was, speaking generally, in favour of the cutting operation, especially in old men. With a large prostatic shelf and possibly a sacculated bladder, there was the greatest difficulty in washing out the last fragments of the stone. In females, and young men with healthy bladders, litholopaxy might be preferred, though he saw no reason why a cutting operation should be dangerous. The results of the former were better, as Dr. Armstrong had said, but that was because the statistics included the operation of pre-aseptic days. He entirely dissented from the statement that litholopaxy was better than cutting in inexperienced hands, for no surgical procedure required more technical skill and experience than the use of the lithotrite.

The Biological Consideration of Menstruation.

Dr J. CLARENCE WEBSTER read a paper on this subject (See page 761.)

Dr. WESLEY MILLS said he regretted that so interesting and exhaustive a paper had been read at so late an hour, as he would like to have heard it discussed and to have considered most of the points raised, himself. As he had said at a recent meeting, he was not prepared to believe that, in primitive peoples or among perfectly normal women at the present time, there was no connection between ovulation and menstruation. The phenomena of rut in the lower animals and menstruation in the human female had points of biological resemblance. Rut was devisable into stages and was accompanied by psychic phenomena. which had their analogies in the human subject during menstruation. It might well be that in our complex modern life there might result some dislocation of processes that were once more closely related in time and physiological sequence. Apart from rut, it did not seem to be possible to understand the evolution of menstruation. No doubt the advances in our knowledge of the innervation of the viscera, together with a deepening conviction of the importance of the essential connection of the nervous system with nutritional changes (metabolism) as such, in all parts must lead to the belief that menstruation, like other vital processes, was controlled by the nervous centres. Nevertheless, to assume that there was one single nerve presiding over menstruation in the same sense as nerves do over glands did not seem to harmonise well with physiological conceptions. Menstruation was part of a series of changes in the uterus, over all of which the nervous system presided ; further, menstruation was but one of a series of related processes in the generative organs, all of which were correlated by the nervous system. Such views, and the conception that there was throughout a difference between the sexes not confined to the generative organs or the body, but extending to the mind, were doctrines Dr. Mills had long been accustomed to teach and the realisation of which seemed of vital importance now that the social and economic relations of the sexes were undergoing such radical changes.

Dr. LAPTHORN SMITH felt indebted to Dr. Webster for his timely paper. The generally accepted views concerning menstruation, as taught in the text books, were wrong ; and Dr. Webster had preformed a useful task in collecting the more correct and modern views, scattered through the literature of the last few years, into one paper. Dr. Smith felt convinced that ovulation was going on long before menstruation began and long after it had stopped ; that nature prepared a fresh nest every month and intended that a fecundated egg should invariably come down to occupy it, but that if by any chance the egg was not fertilised, it died, and the nest being of no use degenerated and came away. In other words the menstrual flow was the funeral of a dead ovum. Sir William Hingston and others, including the speaker, knew of many women in this province who were normal, that is to say, had never menstruated, having become pregnant before menstruation began and were either pregnant or nursing until the menopause. Professor King, of Washington, in an able study of hysteria, pointed out that primeval women instinctively took measures, such as feigning sickness and attracting the attention of a male or calling for help, &c., to ensure that their ovum should become impregnated before menstruation appeared or as soon as their uterus was ready to receive the egg and nourish it, so that a menstrual flow was exceedingly rare among them. Menstruation as we see it to-day is a product of civilization ; the more highly civilized and cultivated the woman, the more, as a rule did they flow. Dr. Smith also agreed with Johnston, of Cincinnati, that menstruation, like a tidal wave of blood towards the uterus leading to the formation of a nest, was under the control of the great sympathetîc nerve, and that by tying the main uterine branch of it near the corner of the uterus menstruation would be stopped. The removal of the ovaries alone without tying the nerve under the tubes, did not arrest menstruation. He had several cases still menstruating after removal of every particle of both ovaries. But the removal of the tubes and leaving the ovaries would stop menstruation. Some are of the opinion that pregnancy takes place after menstruation but this is an error ; if that were so the Jews, who abstain from intercourse for a week, and among some for twelve days, would not be more prolific than Christians; and yet they are. Probably keeping the males away for twelve or fifteen days was an advantage because breeders of animals found that when the males and females were kept apart for some time they would breed more surely than if they were kept constantly together. He had carefully inquired from women who had been seduced and became pregnant, and had learned that the only intercourse had been just before a period, and that the period then due did not make its appearance. A leading physician had told him that he had several young ladies in his practice who had to be locked up every month for a few days before their period in order to avoid a scandal, but they could be safely allowed out the moment the flow appeared. This, he thought, proved that nature meant women to be married before menstruation began and to be pregnant or nursing all the time for the next thirty years.

Dr. W. E. DEEKS thought we must look upon menstruation as analagous to rut in the lower animals. If not, what in the process of evolution had become of this function, and what in the lower forms corresponded to menstruation?

In invertebrate life, as well as in a great many forms of vertebrates, ovulation was not necessarily periodical nor depended in any way on the access of the male, but went on continuously for months. Why not then look upon ovulation in the same way as a gland functionating independently and producing ova more 'or less continuously between and during menstrual periods.

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BRITISH MEDICAL ASSOCIATION.

We publish with very great pleasure the list, given below, of the officers appointed by the home authorities for the forthcoming meeting of the British Medical Association in Montreal. It would, we think, be difficult to have a more distinguished list of office bearers, especially when it is taken into account how many of the leaders of the profession in the old country have already filled the most important posts at previous meetings, and, as a consequence of the wise system of rotation adopted by the Council of the Association, were not eligible to serve here. That so many who have not previously accepted office have consented to preside here in Canada, is a matter for genuine self congratulation.

Of those appointed to deliver addresses we need say little :—Dr. Osler is one of ourselves, even if a great American University has for a time secured him for its staff, and as a Canadian is a most happy choice, inasmuch as he belongs to Toronto as well as to Montreal. Mr. Mitchell Banks is the most popular surgeon in the North of England, is a speaker of great power and is already no stranger in Canada.

Of Presidents of Sections, we heartily congratulate the Association as well as ourselves, that we have secured Dr. E. P. Lachapelle and Dr. R. M. Bucke, representing as they do the best work accomplished in this country in their respective branches. Dr. Stephen Mackenzie and Mr. Christopher Heath's names are familiar to all of us. The Owens College and the active Medical School of Manchester, supply two presidents, Dr. W. J. Sinclair, one of the ablest writers upon gynæcological subjects in Great Britain, and Dr. D. J. Leech, the founder there of one of the very few laboratories of pharmacological research in the old country. In pathology and bacteriology, Mr.

Watson Cheyne has a reputation only equalled by that of Mr. Nettleship in ophthalmology. Dr. Augustus Waller is the most brilliant of metropolitan physiologists. Mr. Malcolm Morris is an ideal president for the section of dermatology and Dr. Grenville Macdonald is the leader of the younger school of British laryngologists. Most of the great London medical schools and hospitals are represented upon this list which altogether, we would repeat is most distinguished and is in itself a guarantee of the success of the meeting. Looking over the list of Canadian vice-presidents it will be seen that the whole Dominion is worthily represented, though we shrewdly suspect that the local executive would gladly have seen some possibility of suggesting an increase in the representation in the larger subjects of medicine, surgery, gynæcology and obstetrics. Under the circumstances it seems to us the selection is admirable and is an earnest that the meeting must be a national and not a local event.

PRELIMINARY PROGRAMME.

President : Henry Barnes, M.D., M.R.C.S., F.R.S.E., J.P., Physician Cumberland Infirmary, Carlisle. President-Elect : T. G. Roddick, M. D., M.P., Professor of Surgery in McGill University, Montreal. President of the Council : Robert Saundby, M.D., F.R.C.P., 83A Edmund Street, Birmingham. Treasurer : Charles Parsons, M.D., Dover. Addresses will be delivered as follows :

Medicine.—Dr. W. Osler, F.R.C.P., Professor of Medicine in the Johns Hopkins University, Baltimore, U.S.A.

Surgery.—Mr. William Mitchell Banks, F.R.C.S., Surgeon to the Liverpool Royal Infirmary.

Public Medicine.—

The scientific business of the meeting will be conducted in eleven sections, as follows, namely :

Medicine.—President : Dr. Stephen Mackenzie, London. Vice-Presidents : Dr. J. E. Graham, Toronto; Dr. W. Bayard. St. John, N.B. ; Dr. J. P. Rottot, Montreal ; Dr. F. W. Campbell, Montreal : Dr. J. Stewart, Montreal ; Dr. H. P. Wright, Ottawa. Secretaries : Dr. H. A. Lafleur, Montreal ; Dr. W. F. Hamilton, Montreal ; Dr. Wm. Pasteur, 4 Chandos Street, Cavendish Sq., London, W.

Surgery.—President : Mr. Christopher Heath, London.' Vice-Presidents : Sir Wm. Hingston, Montreal ; Hon. Dr. Sullivan, Kingston, Ont. ; Hon. Dr. Farrell, Halifax, N.S. ; Dr. I. H. Cameron, Toronto ; Dr. F. LeM. Grasett, Toronto ; Dr. James Bell, Montreal ; Dr. G. E. Armstrong. Secretaries : Dr. R. C. Kirkpatrick, Montreal ; Dr.

Thomas Walker, St. John, N.B.; Mr. Jordan Lloyd, F.R.C.S., Richmond Hill, Birmingham.

Obstetrics and Gynaecology.—President: Dr. W. J. Sinclair, Manchester. Vice-Presidents: Dr. Wm. Gardner, Montreal; Dr. James Perrigo, Montreal; Dr. J. A. Temple, Toronto; Dr. J. C. Cameron, Montreal; Dr. T. J. Alloway, Montreal; Dr. James Ross, Toronto. Secretaries; Dr. D. J. Evans, Montreal; Dr. W. Burnett, Montreal; Dr. A. E. Giles, 58 Harley Street, Cavendish Sq., London, W.

Public or State Medicine.—President: Dr. E. P. Lachapelle, Montreal. Vice-Presidents: Dr. P. H. Bryce, Toronto; Dr. R. Craik, Montreal; Dr. Montizambert, Quebec; Sir James Grant, Ottawa; Dr. R. H. Powell, Ottawa. Secretaries: Dr. Wyatt Johnston, Montreal: Dr. E. Pelletier, Montreal; Dr. Henry Littlejohn, Townhall, Sheffield.

Psychology.—President: Dr. R. M. Bucke, London, Ont. Vice-Presidents: Dr. D. Clark, Toronto; Dr. T. J. Burgess, Verdun, Que.; Dr. A. Vallee, Quebec; Dr. G. Wilkins, Montreal. Secretaries: Dr. J. V. Anglin, Montreal; Dr. Geo. Villeneuve, Montreal; Dr. J. G. Blandford, London County Asylum, Banstead, Surrey.

Anatomy and Physiology.—President: A. Waller, F.R.C.S., London. Vice-Presidents: Dr. F. J. Shepherd, Montreal: Dr. A. B. McCallum, Toronto; Dr. T. Wesley Mills, Montreal; Dr. A. Primrose, Toronto; Dr. J. B. A. Lamarche, Montreal; Dr. Fraser, Stratford, Ont. Secretaries: Dr. J. M. Elder, Montreal; Dr. W. S. Morrow, Montreal.

Pathology and Bacteriology.—President: Mr. Watson Cheyne, London. Vice-Presidents: J. G. Adami, Montreal; Dr. J. Caven, Toronto; Dr. J. Stewart, Halifax, N.S.; Dr. J. C. Davie, Victoria, B.C.; Dr. L. C. Prevost, Ottawa; Dr. M. T. Brennan, Montreal. Secretaries: Dr. W. T. Connell, Kingston; Dr. C. F. Martin, Montreal.

Ophthalmology.—President: Mr. Nettleship, London. Vice-Presidents: Dr. F. Buller, Montreal; Dr. R. A. Reeve, Toronto; Dr. Ed. Desjardins, Montreal; Dr. A. A. Foucher, Montreal. Secretaries: Dr. W. H. Smith, Winnipeg; Dr. Jehin Prume, Montreal; Dr. T. H. Bickerton, Liverpool.

Pharmacology and Therapeutics.—President: Dr. D. J. Leech, Manchester. Vice-Presidents: Dr. A. D. Blackader, Montreal; Dr. James Thorburn, Toronto; Dr. C. R. Church, Ottawa; Dr. J. B. McConnell, Montreal; Dr. F. J. Austin, Sherbrooke. Secretaries: Dr. F. X. L. DeMartigny, Montreal; Dr. J. R. Spier, Montreal; Dr. A. H. Carter, 33 Temple Row, Birmingham.

Laryngology and Otology.—President: Dr. Grenville Macdonald, London. Vice-Presidents: Dr. W. Tobin, Halifax, N.S.; Dr. G. A. S. Ryerson, Toronto; Dr. H. S. Birkett, Montreal; Dr. G. R. McDonagh, Toronto. Secretaries: Dr. Chretian, Montreal; Dr. H. D. Hamilton, Montreal, Dr. W. Permewan, 7 Rodney Street, Liverpool.

Dermatology—President: Mr. Malcolm Morris, London. Vice-Presidents: Dr. J. E. Graham, Toronto; Dr. F. J. Shepherd, Montreal; Dr. J. A. S. Brunelle, Montreal; Dr. J. L. Milne, Victoria, B.C. Secretaries: Dr. Gordon Campbell, Montreal; Dr. J. M. Jack, Montreal; Dr. James Galloway, 21 Queen Anne Street, Cavendish Sq., London, W.

THE TRAINED NURSE.

The trained nurse is being brought very prominently before the public just now, and not always in a favorable light. In the *Nineteenth Century* for January, Lady Priestley writes, under the heading of "Nurses a la mode," an article which certainly does not give the trained nurse an enviable character. She accuses her of "giddiness and thoughtlessness" and various other graver things. In the February number of the same magazine, Mrs. Bedford Fenwick, formerly matron of St. Bartholomew's Hospital, replies and says that the diplomaed nurse is guiltless of any improprieties in thought, word, or deed, but that it is those *who are not trained nurses at all* to whom Lady Priestley's charges refer. Her remedy for any difficulties which exist at present is to have a register of trained nurses on the same lines as the Medical Register. The true state of affairs is probably between the two extremes represented by these writers. The trained nurse has become a great factor in the daily fight with disease. She is a great improvement on the days of Sairey Gamp, but she is not as many of them apparently think, indispensable. In losing the old-fashioned nurse we have, in many cases, lost a great deal. She may not have known much, but she did her work cheerfully and was not particular about her duties; she came in a time of trouble and came to help and not to add to the burdens of the afflicted family; if the mother of the family was laid up she looked after the children and made things run until health returned. The trained nurse in many instances is too particular about her duties, about what it is her place to do; in attempting to become professional she becomes unsympathetic, and the question of remuneration plays too prominent a part in all her calculations. All trained nurses are not like this, nor indeed are the majority so; even Lady Priestley says that she has known many an ideal nurse. But the faults we have pointed out are far too common and it behooves the nurse to endeavour to remedy them.

The trained nurse is really a luxury; the price put upon her services removes her out of the reach of any but the well-to-do. Various schemes have been devised to help the man who is not well-off. One scheme, which has been tried in several American cities with considerable success, is that of visiting nurses; the nurse is sent for when she is required, be it for a surgical operation, a confinement, or any other cause, and leaves the house as soon as her services can be dispensed with; afterwards she visits the patients once or twice daily to attend to them. Each visit is charged for at a definite rate and thus the nurse receives an adequate remuneration for her services and each individual patient obtains what attendance he needs at a comparatively low rate.

Another scheme, which it is proposed to introduce in Montreal, is that one of our hospitals should retain the services of three or four of its graduate nurses, giving them board and lodging within the hospital and paying them a yearly salary. The services of these nurses would then be available to any one who is unable to pay the full rate, for the hospital authorities, after due enquiry into the patient's financial ability, would let him have a nurse at a reduced rate. This scheme, while it evinces an honest desire to overcome what is admittedly a difficulty and a hardship, does not recommend itself to us, for the simple reason that it practically amounts to making those patients who avail themselves of this offer on the part of the hospital, recipients of charity. After carefully reading the letters which have appeared in the daily papers, we can only come to the conclusion that the amount received by the hospital from the patients in return for the services of the nurses will not be sufficient to defray the expenses thereof. This means a deficit and this deficit will have to be made good by the contributions of the charitably disposed. We cannot but think that the average man in receipt of a fair income would rather have a nurse for part of the time and pay for her, than have a nurse all the time and have somebody else bear part of the expense.

Still another scheme is to have two classes of nurses: a fully trained class as at present for those who can afford to pay the necessary fees, and a second class who have taken a shorter course and consequently, being less fully trained, will work for less money. Such an arrangement appears to be rather a dangerous experiment. Much time and labour have been expended in bringing trained nursing to its present high state of efficiency and this proposed scheme seems like a retrograde step and we greatly fear will prove to be such. To a large proportion of the laity a nurse is a nurse no matter how long or how short a time she has spent in acquiring her training, and the public mind would utterly fail in many instances to grasp the difference between the two classes of nurses. A short time ago, eighteen months was considered quite long enough for a nurse to remain in a training school; now many of the hospitals are demanding three years of their time before they consider them sufficiently trained to enter upon private practice. Therefore, if this scheme be carried out, we fear that if a nurse with one year's training is good enough to nurse some people she may be considered good enough to nurse all the people.

These are the main schemes which have been propounded to relieve a condition of affairs which actually amounts to a hardship. The first scheme, that of the "Visiting Nurse," seems to more nearly suit the requirements of the case than the others. That so much thought and energy should be expended to relieve the necessities of suffering humanity, as is evinced by the very multiplicity of schemes, is a satisfactory and gratifying proof of the growth of true charity in our midst.

THE CASE OF DR. CULLINGWORTH.

In connection with the above, this *cause celèbre* may be mentioned, for the chief actor in it was a trained nurse. The facts of the case are briefly as follows: The nurse came under Dr. Cullingworth's care for a condition which apparently necessitated the removal of the uterine appendages on one and possibly on both sides. The patient declined to give consent to the complete operation and the doctor declined to operate unless given full permission to deal with the case as seemed best after the abdomen was opened. Finally a relative of the patient told the operator that the patient had given consent and thereupon the operation was performed, both sides being operated upon. Throughout the case there was never any question about the advisability of the course pursued during the operation, the whole question being whether the patient had given her consent or not. The patient brought suit against the doctor alleging that she underwent the operation on the distinct understanding that only one side was to be operated upon. The case came up for trial and was won by Dr. Cullingworth and being appealed it was decided again in his favour. The judge gave as his opinion that the operation had been performed in good faith and under such circumstances it would be unjust to condemn the operator for completing an operation when by so doing he could cure the patient, whereas a partial operation meant certain failure. The verdict was received with general satisfaction and Dr. Cullingworth was heartily congratulated on all hands at the happy termination of a most annoying piece of business. In all such cases it is undoubtedly wiser to have a very clear understanding with the patient herself and that in the presence of witnesses. It evidently does not do to put much faith in the feelings of gratitude which the patient is popularly supposed to entertain for the physician, nor yet in the ethical consideration or feelings of professional honour which are supposed to govern dealings between nurses and doctors.

THE VICTORIAN ORDER OF NURSES.

It is proposed that in Canada the Diamond Jubilee of Our Beloved Queen shall be celebrated in a manner thoroughly in keeping with her expressed wishes. Always ready, both by precept and example as well as by substantial aid, to help on all charitable works, the establishment of this order of nurses cannot fail to afford gratification to Her Majesty. To Her Excellency, the Countess of Aberdeen, is due the inception of an idea which we trust is destined to give relief to sufferers throughout the whole Dominion. It is especially designed to reach the sparsely settled districts of our great Northwest. Stated briefly, it is proposed to establish centres throughout the country where one or more trained nurses will be located. From these centres the nurses will go forth as necessity may arise, and lend their aid wherever and whenever required. The expenses of the nurses are to be guaranteed, in part at least, by the district in which they are settled. As yet the idea is in its infancy and the working out of the details will take time and thought. It is an idea that appeals to all, although its very magnitude makes many fearful of its success. But every good work must have a beginning, and this one having such powerful supporters seems destined to success and certainly deserves universal support and assistance.

MEDICAL LIBRARY OF THE MEDICAL COLLEGE, McGILL UNIVERSITY.

Donations to the Library for Quarter ending Feb. 27th, 1897.

To the following authors the Library is indebted for copies of their works:

D. Campbell Black, M.D., L.R.C.S., Edin.—The Urine in Health and Disease and Urinary Analysis, 1895; Medical Environment, 1896.

J. Clarence Webster, B.A., F.R.C.P., Edin.—Die Ektopische Schwangerschaft Ihre Aetiologie, Klassifikation, Embryologie, Symptomatologie, Diagnose und Therapie.

A. C. Abbott, M.D.—Principles of Bacteriology 3rd Ed., 1895.

J. Burney Yeo, M.D., F.R.C.P.—Food in Health and Disease.

John C. Thresh, D.Sc. Lond., M.D. Victoria, D.P.H. Cambridge.—Water and Water Supplies, 1896.

H. Scurfield, M.D., Ed., D. Ph. Camb.—Animal Tuberculosis and their Relation to Human Tuberculosis. Tr. from the French, 1895.

W. E. Fothergill, M.A., B.Sc., M.B., C.M.—Manual of Midwifery, 1896.

Stephen Paget, M.A., Oxon., F.R.C.S.—The Surgery of the Chest, 1896.

As well as the following pamphlets.

A. E. Barker, F.R.C.S., Eng.—Traumatic Derangement of the Knee Joint, Clinical Lecture on Seven Cases of Perforated Gastric Ulcer treated by Operation with three Recoveries; Notes on the Permanent Subcutaneous Method of Wiring the Patella for Fresh Transverse Fracture.

W. F. Gairdner, M.D., LL.D. On certain Arrangements made in the City of Glasgow, with a view to the Prevention of Epidemic Cholera; Address on Medical Education.

It has also received the following for which it is much indebted to the contributors.

Professor Adami—Gazette des Hopitaux for 1896. Medical Chronicle Vol. XII.

Professor Shepherd—Der Lustige Aesculap, by Von Dr. Peter Hilarius; Transactions of the American Orthopedic Association, Vol. IX, 1896. The Diary of a Resurrectionist, 1811-1812, by J. B. Bailey, B.A., 1896, Pamphlets.

Professor Blackader—Materia Medica, Therapeutics and Pharmacology, by G. F. Butler, Ph.G., M.D., 1896.

Professor J. C. Cameron—American Journal of Obstetrics, 1896.

Professor Finley—Fortschritte der Med. Bd. 94 and 95; Transactions of the Medical Society of the State of New York, 1892; International Clinics, Vol. III, 1893; La Semaine Medical, 1896.

Dr. D. J. Evans—Archiv. für Kinderheilkunde, XVII, Bd. 1894, XVIII, Bd. Nos. 1-2.

Dr. Kirkpatrick—(Montreal Medical Journal) Unbound journals and pamphlets.

Dr. Gould—University Medical Magazine, Vol. 1.; Medical News and Abstract, Vol. 38-39; Medical News, Phil., Vols. 18 to 30.

Editors of the Montreal Medical Journal; Clinical Skiagraphy, Vol. 1, Pts. 1-2.

Dr. James Kerr—Photomicrographs of Normal Histology, Human and Comparative, 3 Vols., 1893.

Boston Medical Library—Guy's Hospital Reports, Vols. 16-25.

Bristol Medical Library—Brain, Vols. 12, 13, 15, 16, 17, 18; Annals of Surgery.

Royal College of Physicians, Lond.—Calendars.

Transactions of the Philadelphia Pathological Society, 14 Vols.

Transactions of the Ophthalmological Society of New York.

Transactions of the Ohio State Medical Association.

Ophthalmic Record from the Publishers.

Royal College of Surgeons, Eng., one hundred and eleven pamphlets and four books.

Transactions of the Medical Society of the State of New York, 38 Vols.

Dr. A. S. Myrtle—Journal of Balneology and Climatology.

Second Annual Report of the Board of Health, Prov. of Quebec.

NEW BOOKS AND JOURNALS—Guide to the Practical Examination of the Urine, Tyson, 1896; Jahresbericht der Gesammten, Med.; Diseases of Women. Lewers, 1896; Charité-Annalen; International Clinics; Archiv. f. exper. Path. u. Pharm.; Medical Record; Annals of Surgery; American Journal of Medical Science; Revue des Sciences Médicales; Journal of Cutaneous and Venereal Diseases; System of Surgery, Treves, 2 Vols. 1895; Archiv. für Klin. Medicin, 1868-78; L'Union Medicale du Canada; Archiv. für die Gesammte Physiologie Plüger; Zeitschrift für Klinische Medicin; Fortschritte der Medicin; Clinical Gynaecology, Keating & Co., 1896; System of Medicine, Allbutt, Vol. 2, 1897; Text-book of Physiology, Foster, 1896; Virchow's Archiv. für Path. Anat. 12 Vols.; Anomalies and Curiosities of Medicine, Gould and Pyle, 1897; Centralblatt für Bakteriologie und Parasitenkinde; Medical News, Phil.; New York Medical Journal; Medical Record; Berliner Kl. Woch; University Medical Journal; Practitioner, Lond. 1896; Science and Art of Surgery, Erichsen, 2 Vols. 1895; Text-book of Medical Jurisprudence, Reese.

The Library is indebted to Messrs. Henry Birks & Sons for a very beautiful Library Clock.

CONVOCATION OF McGILL FACULTY OF MEDICINE.

The sixty-fourth Annual Convocation for conferring degrees in Medicine in McGill University took place on Friday afternoon, April 2nd, in the Queen's Theatre. The Chair was occupied by the Chancellor, Sir Donald A. Smith, and on the platform were seated the members of the Faculty and other members of convocation.

The proceedings were opened with a short prayer, after which the Dean read the pass-lists and the prizes were presented. The graduates, seventy-six in number, were "Capped" by Dr. Peterson and then Dr. J. G. MacDougall delivered the student's valedictory. The valedictory on behalf of the Faculty was read by Dr. Birkett. Professor Craik, Dean of the Faculty gave his Annual Report of the work done during the session.

He stated that the total number of students enregistered in the Medical Faculty during the past session was 385 of whom 134 were residents of the Province of Quebec; 113 were from Ontario; 98 came from the Maritime Provinces including Newfoundland and Labrador; 23 from the United States; 13 from the Northwest Provinces and Territories; 2 from the West Indies; and one each from Ireland and Chilli, thus fully sustaining the cosmpolitan character of the College.

He made the pleasing announcement that Mr. Drake had endowed the Chair of Physiology to the extent of $25,000, and that the name of the late Dr. Joseph M. Drake was to be attached to the endowment.

The re-organization of the department of Hygiene was referred, to as well as the improvements in the Museums and Laboratories in the College.

The success of the Post-graduate course was a subject for congratulation, as it more than fulfilled the most sanguine expectations. The fact was mentioned that this was the last time that the Convocation would be held at this time of year, for the increased length of the session would postpone it until June.

The death roll included Dr. Reynolds, a graduate of 61 years standing.

The following gentlemen, 76 in number. have fulfilled all the requirements to entitle them to the degree of M.D., C.M., from the University:

Barclay, J	Montreal, Que.
Brown, W. K	Montreal, Que.
Brown, C. L., B.A	Port Lewis, Que.
Burrell, R. H., B.A	Yarmouth, N.S.
Campbell, I. G., D.V.S	Montreal, Que.

Clindinin, S. L	Brighton, Ont.
Curran, T. J. J	Montreal, Que.
Delmage, F. W., B.A	St. Marys, Ont.
Doyle, J. J	Halifax, N.S.
Dunbar, W. R	Abercrombie, N S.
Eberts, E. M. von	Winnipeg, Man.
Foster, G. M	Pembroke, Ont.
Foster, A. L	Ottawa, Ont.
Gilday, F. W	Montreal, Que.
Gordon, G. S	Halifax, N.S.
Gourley, T. A	Eganville, Ont
Gurd, C. C., B.A	Montreal, Que.
Harding, E. S	Amherst, N.S.
Harvey, F. C	Wolfville, N.S.
Hayden, E. W	Cobourg, Ont.
Hurdman, H. H	Ottawa, Ont.
Johnston, J. A	Emerald Junc, P.E.I.
Johnston, W	Charlottetown, P.E.I.
Jost. A. C., B.A	Guysboro, N.S.
Keenan, C. B	Ottawa, Ont.
Kerr, R. A	Montreal, Que.
Kirby, H. S	Ottawa, Ont.
Laidley, I. H	Montreal, Que.
Laing, A. L	Montreal, Que.
Lennon, H., B.A	Montreal, Que.
LeTouzel, J. R	Goderich, Ont.
Lockary, J. L	St. Stephen, N.B.
Lyster, H. F	Richmond, Que.
MacCallum, E. C.	Kingston, Ont.
Macdonald, D. J	Whycocomagh, C.B.
McDougall, G. P	Grand River, P.E.I.
McDougall, J. G	Blue Mountain, N.S.
McElroy, A. S	Richmond, Ont.
McKinnon, F. W	Vankleek Hill, Ont.
McLennan, A. A	Lancaster, Ont.
McLennan, D. A	Montreal, Que.
McNally, W. P	Abrams Village, P.E.I.
McRae, J. D	Glen Ellis, Ont.
McRae, W. R	Baddeck, C.B.
Malloch. N	Kenmore, Ont.
Maloney, M. J	Eganville, Ont.
Merkley, E. A	Morrisburg, Ont.
Morris, C. H., B.A	Windsor, N.S.
Morse, L. H., B.A	Bridgetown, N.S.
Midgley, R. J	Woodstock. Ont.
Milburn, J. A	Peterboro, Ont.
Pallister, W. T	Guelph, Ont.
Palmer, A. J	Buckingham, Que.
Pennoyer, A. R	Gould, Que.
Ritchie, A. A	Dalhousie, N.B.
Robert, G. C	Holyoke, Mass.
Robertson, H. M	Chatham, Ont.

Rogers, F. E	Brighton, Ont.
Roy, J. J	New Glasgow, N.S.
Scott, W. T	Montreal, Que.
Skeels, A. A., B.A	Montreal, Que.
Smith, H	Acadia Mines, N.S.
Smith, R. A	Durham, Ont.
Stanfield, H. M., B.A	Truro, N.S.
Sterling, A	Fredericton, N.B.
Sutherland, G. R	Hodgson, N.S.
Tierney, J. A	Valleyfield, Que.
Thomas, H. W	Montreal, Que.
Thomas, J. E	Montreal, Que.
Thompson, J. A	Kinnears Mills, Que.
Tozer, F. W	Newcastle, N.B.
Trainor, J. B	Kelly's Cross, P.E.I.
Wainwright, F. R	Montreal, Que.
Wainwright, S. F. A	St. Andrews, Que.
Williams, E. J., B.A	Sherbrooke, Que.
Wilson, F. W. E	Montreal, Que.

HONORS, PRIZES AND MEDALS.

HOLMES GOLD MEDAL for the highest aggregate in all the subjects of the Medical Curriculum, John George McDougall, of Blue Mountain, Nova Scotia.

FINAL PRIZE for highest aggregate in Third and Fourth years subjects, Alexander Ross Pennoyer, of Gould, P.Q.

CLEMESHA PRIZE for Clinical Therapeutics, Isaac Henry Laidley, of Montreal, P.Q.

SUTHERLAND MEDAL to Arthur Lyall McMurty, of Bowmanville, Ont.

SECOND YEAR PRIZE to William Oliver Rose, of Lakefield, P.E.I.

SENIOR ANATOMY PRIZE to Newton Esra Drier, of Richmond Corners, N.B.

FIRST YEAR PRIZE to Alva Hovey Gordon, of St. John, N.B.

JUNIOR ANATOMY PRIZE to Laughlin George Cameron, of Ottawa, Ont.

BOTANY PRIZE to Thomas Turnbull, of Stratford, Ontario.

ZOOLOGY PRIZE to Alva Hovey Gordon, St. John, N.B.

HONORS IN AGGREGATE OF FINAL SUBJECTS.

1. McDougall, J. G.
2. Pennoyer, A. R.
3. Keenan, C. B.
4. Gurd, C. C. B.A.
5. Eberts, E. M. von
6. Jost, A. C., B.A.
7. MacCallum, E. C. D.
8. Stanfield, H. M., B.A.
9. Laidley, I. H.
10. Roy, J. J.
11. Lennon, H, B.A.
    Lockary, J. L.

HONORS IN SURGERY AND CLINICAL SURGERY.

1. McDougall, J. G.
2. Pennoyer, A. R.
3. Eberts, E. M. von

12. Laidley, I. H.
    Skeels, A. A., B.A.
14. Harding, E. S.

4. Lockary, J. L.
5. Keenan, C. B.
6 Pallister, W. T.
7. Jost, A. C., B.A.
8. MacCallum, E. C. D.
9. Thomas, J. E.
Lennon, H., B.A.,
Gurd, C. C., B.A.
15. Smith, H.
16. Malloch, N.
17. Johnston, J. A.
18. Roy, J. J.
19. Robertson, H. M.
20. Tozer, F. W.

HONORS IN MEDICINE AND CLINICAL MEDICINE.

1. Keenan, C. B.
2. McDougall, J. G.
3. Stanfield, H. M., B.A.
4. Pennoyer, A. R.
5. Smith, H.
6. Skeels, A. A., B.A.

HONORS IN GYNÆCOLOGY.

1 McDougall, J. G.
2. Pennoyer, A. R.
3. MacCallum, E. C. D.
4. Gurd, C. C., B.A.
5. Eberts, E. M. von
Smith, H.
7. Keenan, C. B.
8. Morse, L. H., B.A.
9. Stanfield, H. M., B.A.
10. Jost, A. C., B.A.
Maloney, M. J.
12. Lennon, H., B.A.
13. Trainor, J. B.

HONORS IN OBSTETRICS.

1. MacDougall, J. G.
2. Keenan, C. B.
3. Gurd, C. C., B.A.
4. Johnston, J. A.
5. Delmage, F. W., B.A.
6. Pennoyer, A. R.
7. Barclay, J.
8. Midgley, R. J.
Wainwright, F. R.
10. Kirby, H. S.
Morse, L. H. B.A.
12. Johnston, W.
McLennan, A. A.
Wilson, F. W. R.
15. Eberts, E M. von
16. MacCallum, E. C. D.
17. Jost, A. C., B.A.

HONORS IN SPECIAL PATHOLOGY.

1. McDougall, J. G.
2. Eberts, E. M. von
3. Johnston, W.
4. Keenan, C. B.
5. Gordon, G. S.
Jost, A. C., B.A.
7. LeTouzel, J. R.
8. Pallister, W. T.
Roy, J. J.
Tozer, F. W.
Maloney, M. J.
Merkley, E. A.
McLennan, A. A.
Pennoyer, A. R.

HONORS IN OPHTHALMOLOGY.

1. Pennoyer, A. R.
2. McDougall, J. G.
3. Trainor, J. B.
4. Eberts, E. M. von
5. Stanfield, H. M., B.A.
6. Jost, A. C., B.A.
Wainwright, F. R.
8. Smith, H.
Keenan, C. B.
10. Campbell, I. G., D.V.S.
11. Johnston, J. A.
12. McRae, J. D.
13. Lockary, J. L.
14. Roy, J. J.

Dr. Edward Playter, who has been investigating the causation and cure of consumption, is desirous of the co-operation of the medical profession in obtaining data with regard to the respiratory capacity of those predisposed to consumption. His idea is that these persons have a relatively small respiratory capacity, and he asks all physicians who have such patients to send him the information indicated in the following questions:

Give (1) name (or initials); (2) sex; (3) age; (4) occupation; (5) height; (6) weight (average when in usual state of health); (7) circumference of the chest on a level with sixth costo-sternal articulation when momentarily at rest after an ordinary expiration, and also (8) after habitual natural expansion or inspiration (which last (8) usually exceeds the first measurement, expiration (7), by an increase of only about one-fourth of an inch); finally (9), the circumference after a *forced* expiration, and also (10) after a forced inspiration (these two measurements, 9 and 10, varying or showing a range of from 1½ to 4 inches). The patient should of course be as calm as possible and had better, usually, practice the *forced* breathing for a few acts before these two last measurements, 9 and 10 are taken.

To be of value, all four measurements should be taken as carefully, accurately and free from haste as possible.

Any further information, in brief, as to degree of heredity (family history) in cases, *prominent* symptoms, loss in weight, cough, dulness on percussion, etc., etc., or any remarks, will be a decided advantage.

(Address) EDWARD PLAYTER, M.D.,
Ottawa, Ont.

The Columbus Medical Journal has removed from 150 E. Broad St., to its new quarters, 68 Buttles Ave., Columbus, Ohio.

Dr. Roddick, the President-Elect of the British Medical Association has been elected an honorary member of the London Medical Association.

The seventh annual meeting of the National Confederation of State Medical Examining and Licensing Boards, will be held in Philadelphia, commencing Monday, May 31, 1897.

The objects of the confederation are to consider questions pertaining to state control in medicine and to compare methods in vogue in the several states, to collect and disseminate information relating to medical education, and to consider propositions that have for their purpose the advancement of the standards in the United States. A cordial invitation to attend the meeting and participate in its proceedings is extended to all members and ex-members of State Medical Examining Boards, and to physicians, sanitarians and educators who are friendly to the objects named. A. Walter Suiter, Secretary, Herkimer, N.Y.

Obituary.

SIR SPENCER WELLS.

Another of the great medical worthies of the Victorian era has passed away in the person of Sir Spencer Wells. So many have left us lately that the obituary notices have in this instance been relatively brief, and yet Sir Spencer accomplished work that will not easily be forgotten, and he will surely always be counted among the great surgeons of the century. We well know that others before him had performed ovariotomy. Old Latin writers refer to the removal of the ovaries of the healthy female by the Egyptians and Lydians, and even at the present time the custom has not died out among the aboriginal Australians and in sundry parts of India, while both in England and America the diseased ovaries had been removed years before Spencer Wells appeared upon the scene. Others again in late years have performed the operation with a more brilliant technique and a yet greater measure of success. But he may rightly be said to have been the first to *practice* the operation, and he it was who by his practice and by his writings fixed the attention of our profession upon this mode of relieving much suffering in the gentler sex, and who again, by the successive publication of his 2000 cases of ovariotomy with failures as fully treated as successes, demonstrated to the medical public wherein lay the advantages and the dangers of the operation.

There is no good movement but is liable to be harmed by zealots, and —let us acknowledge it straightly—by fools, and we have sorrowfully to admit that the conservative and cautious procedure of Sir Spencer Wells has at times been replaced, on the part of some of his followers, by rash and utterly indefensible ablation of the internal genitalia. But all must acknowledge that the benefits conferred upon womankind—the arrest of agony, the return to healthy activity, the gift of years of life—all these far exceed any abuse of ovariotomy that has occurred during the last forty years. While further we must acknowledge that the successful results obtained by the ovariotomists have led to the remarkable expansion of abdominal surgery in general.

Though born in 1818, almost within sight and sound of St. Paul's Sir Spencer Wells was not a London student proper, nor had he the ordinary career of the great London surgeon, rising by slow degrees from one hospital appointment to the other. On the contrary before settling in London he had passed through many schools; Trinity College, Dublin, Leeds Infirmary, Anatomical School, Dublin, and St. Thomas's Hospital, and had spent years in the navy where he saw active service. At the outbreak of the Crimean war he was made chief surgeon of the hospitals at Smyrna and Renkioi. Such was scarce the training one would picture as developing the great gynæcologist. But such it was and on his return to England he rapidly came to the fore, and in 1865 he published his first great work in which was detailed his ten years experience in abdominal surgery and especially ovariotomy. Other well-known works followed including the "Diagnosis and Treatment of Abdominal Tumours," in 1885. In 1882-83 he was President of the Royal College of Surgeons, in 1883, he was made a baronet. Dublin, Leyden, Charkof and Bologna conferred honorary degrees upon him, while the list of learned societies of which he was an honorary member is long and embraces many countries.

The surgeon cannot hope to continue in the active exercise of his profession so long as the physician. After seventy the co-operation of eye and hand are not in most men sufficiently sure. Thus for some years Sir Spencer had practically ceased from active work. Nevertheless he continued to be a well-known figure in English medical circles, with his round genial face, fresh, almost apple blossom complexion, and characteristically English appearance, a country gentleman edition of Pickwick with a subtle something that proclaimed the medical man of the best school.

J. G. A.

JOHN MOWBRAY McCLURE BRATHWAITE, M.D., C.M.

It is only a year ago that Dr. Brathwaite's name appeared in the list of those who had successfully passed the examination in the final branches of McGill University. He passed most successfully, taking honours in gynæcology, but he was destined never to practice his chosen profession. He was not in good health at the time of the examinations and never regained his strength. He was the son of Mr. John H. Brathwaite, of East Point, in St Philip, Barbados, and the great-grandson of General Brathwaite. He passed away on January 21st, 1897, at the early age of 24, mourned and regretted by all who knew him.

ROBERT TODD REYNOLDS, M.D.

We regret to record the death of Robert Todd Reynolds, M.D., of Chicago. Dr. Reynolds was the oldest living graduate of McGill University, having graduated in medicine in the year 1836. He practiced in Berlin, Ont., for fifty-five years, retiring in 1891, and since has resided in Chicago, with his son-in-law, Mr. R. M. Jaffray.

At the time of his death he was in his 86th year. He was the only son of Commissary General Robert Reynolds, of the British Army, who was stationed with the 34th Regiment at Fort Mulden, in 1837. Dr. Reynolds was a highly respected practitioner. His advice was for more than half a century much sought after. He truly died full of years and of honour.

WILLIAM GRANT, M.D.

It is with sincere regret that we chronicle the death of William Grant, M.D., of Perth, Ont., which event occurred unexpectedly at his home on the 17th of January. Dr. Grant was born in Summerstown, in the County of Glengarry, in 1846, and graduated in medicine from McGill University in 1867. He shortly afterwards established himself in Perth, where he continued to practice his profession up to the morning of his untimely death. In addition to conducting a large practice, Dr. Grant took an active part in all matters relating to the educational and material progress of the country. His place will with difficulty be filled.

NEW BOOKS, ETC., RECEIVED AND NOTED.

Anomalies and Curiosities of Medicine. By George M. Gould, M.A., M.D., and Walter L. Pyle, A.M., M.D. Philadelphia: W. B. Saunders.

Remarks on the Management of Glaucoma. By Leartus Connor, A.M., M.D. Reprint from Journal of American Med. Assoc., Aug. 29th, 1896.

Transactions of the American Ophthalmological Society. Thirty-Second Annual Meeting, 1896.

Bacteriology and Infective Diseases. By Crookshank. H. K. Lewis, London: Fourth Edition.

High Altitudes for Consumptives. By A. Edgar Tussey, M.D. P. Blackiston, Son & Co., Philadelphia.

American System of Practical Medicine. By A. L. Loomis and W. J. Thompson. New York & Philadelphia: Lea Bros. & Co.

Dental Surgery. By A. W. Barrett. London: H. K. Lewis.

On Deafness, Giddiness and Noises in the Head. By Edward and Claude Woakes. London: H. K. Lewis.

New Method of Performing Intestinal Anastomosis. By J. A. Bodine. Reprint from Medical News, Jan. 9th, 1897.

The American Year-Book of Medicine and Surgery. Gould, 1897. W. B. Saunders, Philadelphia.

The Hunterian Oration. By Christopher Heath, F.R.C.S.

The Treatment of Carcinoma Mammæ. By Carl Beck. Reprint from the Clinical Recorder, October, 1896.

Pyothorax. By Carl Beck. Reprinted from the International Medical Magazine, January, 1897.

Beitrag zur Literature der subphrenischen Abscesse. Von Carl Beck. Sonderabdruck aus dem Archiv. für Klinische Chirurgie, 52. Bd. Heft. 3.

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Original Communications.

VALEDICTORY ADDRESS.

DELIVERED TO THE GRADUATES IN MEDICINE AT THE ANNUAL CONVOCATION OF THE MEDICAL FACULTY OF McGILL UNIVERSITY.

APRIL 2ND, 1897.

BY

H. S. BIRKETT, M.D.,
Professor of Laryngology, McGill University: Laryngologist, Montreal General Hospital.

GENTLEMEN OF THE GRADUATING CLASS:

For the past four years it has been the duty of the Members of the Faculty to lecture to you within the College walls of the University, and in the theatres of the hospitals, but to-day such duties cease, and the relation of pupil and teacher no longer exists; we are *confrères* and to me has been delegated the privilege of congratulating you upon your preferment, and of welcoming you to the ranks of an honourable profession.

Your progress during the past four years has been our earnest care, and no effort has been spared to fit you for the responsibilities which, from this day forth, you are yourselves to assume. You have been brought to the goal of your first ambition, and it now remains for each of you to determine your future career.

There is much to be borne and much that is wearisome in the conditions of life upon which you are about to enter. The weight of the burden can be lightened by the view you may take of the work. Do not look to your profession as a mere source of pecuniary gain and personal preferment, for it offers you the highest opportunities for the advancement of your intellectual powers, the promotion of social good and the alleviation of physical woes of suffering mankind. By concentrating every faculty to the careful fulfilment of such work, the dull prosaic side of life will be lightened by a consciousness of a noble duty effectually accomplished, which will throw around your ordinary duties a halo, and relieve the tedium of your solitary hours. Those men who have entered upon the study of medicine from love of it, make the best students and doctors,--the physician to be successful must think his profession the finest in the world.

Our profession is an arduous, yet fascinating one. Our responsibilities are great. "We are trusted as no other men are. By the force of circumstances, as well as by the relations of mutual confidence which grow up between the patient and his medical adviser, enormous power for good or evil lies within our hands, and on our discretion depends frequently the happiness and well-being of families." You are to become the trusted friend of the family, and whatever is entrusted to your care must be regarded as sacred; a breach of such trust will mark you as unworthy of the profession. Therefore do not make the ailments of any patient or their private affairs a topic wherewith to entertain others whilst making your daily rounds. There is no more objectionable individual than a gossiping doctor.

The question at the outset which undoubtedly has occurred to each of you is, "What am I going to do"? To some of you are open positions as house-surgeons in the hospitals, either in this city or elsewhere, and I would strongly urge the seeking of such positions. Once installed, you will find opportunities unexcelled of more properly fitting you for the great responsibilities of your calling. Here your mind will be trained to be observant, careful and exact in noting the details of cases under your direct charge.

The benefit of this cannot be overestimated, and it will stand you in good stead when out in general practice. Many a prominent physician and surgeon of the day owes his position to the proper use made of the opportunities afforded him in his capacity as house-physician and surgeon.

Others of you must be satisfied with the opportunities afforded of starting into general practice at once; unless under exceptional circumstances, it will be impossible for such to be fully occupied from the start. In this way the time at your disposal will at first be considerable, and you will form habits during this critical period which will leave their impress on your future life. Indolent and careless habits so easily grow upon one, that they have marred many a promising career, while habits of research and thoroughness, coupled with a love of the profession, are sure not only to lead to success but to greatly facilitate your future work. If you have few cases, let them be carefully studied, and do not put away your text books with the parchment you have received to-day.

Some of you may anticipate a trip abroad to visit the various hospitals of Great Britain and the Continent. Just a word on this subject. You are as yet inexperienced, the advantages of such a trip cannot at present be fully appreciated, as you are not in a position to sift the chaff from the wheat. The result is a lot of valuable time wasted and money spent to no advantage.

After four or five years work in general practice, or after holding a hospital appointment as resident for a year or so, you are then in a position from the experience acquired to spend a couple of years very profitably abroad.

Unfortunately however there are cases amongst the graduating class of each year which necessitate some to cross the Atlantic and obtain further degrees to enable them to become registered practitioners of certain Provinces of the Dominion. This state of things is a deplorable one, and let us hope the day is not far distant when one license will give the profession the privilege of practising anywhere in Her Majesty's Dominions.

That any one should cross the Atlantic simply with the idea that having acquired further degrees he is therefore entitled to be more deserving of practice is a delusion ; the laity looks to the personal ability of the practitioner and not to any additional degrees he may have secured.

A danger which confronts us in the present time is the ambition of the recent graduate in medicine to take up a speciality, and how often one is asked by the newly created M.D., "What speciality might I take up?"

Specialism is not a branch of medicine separated by a definite line of demarcation, independent of and quite distinct from the field of general practice, but should be regarded as supplementary to this. A field open to the general practitioner who, in his riper experience, will add to his store of knowledge by such further researches in the region of science as will enable him to deal in a skilful manner with diseases of certain organs which require specific treatment. The specialist is thus a co-worker with the general practitioner, not an antagonist striving for his own selfish aims, but working harmoniously to their mutual advantage. The recent graduate who imagines that all that is necessary to qualify as a specialist is to spend a few months abroad, or, as some do, a few weeks, attending the clinics of hospitals not far from home, makes as ad mistake. To these short-term specialists is attributable much of the harm done to specialism. They bring discredit upon themselves and court the displeasure of the general practitioner. With no foundation of general practice, and a brazened knowledge of the speciality they profess to have studied, they launch out, and I can hardly find words forcible enough to denounce their miserable attempts at treatment in which they more often fail than succeed. Men of one idea, and that too often warped by interest, they ascribe to causes for which their speciality has the remedies, all the ills that human flesh is heir to. Then follow the usual results, diagnosis wrongly formed, treatment misdirected, damage irreparably done and the lives of many rendered miserable; but "When thoroughly grounded in the principles and practice of your profession, and having acquired experience from some years of practical work, it will then be time enough to turn particular attention to some one branch of it. I do not wish to discourage you, if your taste and talent so incline you, from acquiring knowledge and skill in one particular line, for the range of work has become so enlarged that it is impossible for one to perfect himself in all its various branches. So, if in time you find you possess a particular skill in some certain line of work, and your skill receives such acknowledgment from your fellows as to justify you in relinquishing general work for a specific line of action, then I consider you would be quite justified in confining yourself to that special work." (Dr. H. Kelly.)

Determined then to practice some special branch of medicine, let it be after considerable experience in general practice, and after at least two years abroad, studying hard and honestly in special hospitals. No one can acquire a solid foundation in any speciality in less time, for if the foundation be weak, the whole super-structure must necessarily be defective.

Enter your new field with a broad mind, determined to investigate and treat local trouble as generally dependent upon a manifestation of disorganisation of the whole system, and not as symptoms to be viewed and treated only through the means of the speculum, laryngoscope and ophthalmoscope. Then when fully and properly qualified, you will be esteemed by your brother specialists and win the confidence of the general practitioner.

As a practitioner either in the country or the city, let your moments of leisure be occupied in reading as much as possible the current medical literature, in attending meetings of the medical societies, and indulging in some form of profitable recreation. Contribute your share, however small in the advancement of medicine and surgery, by reporting your cases, either before the medical societies, or in reputable medical journals. Your work may be criticised, but do not let that discourage you, but rather incite you to better things.

Seek opportunities to visit your Alma Mater, and the various hospitals where you will, and to come in contact with men of experience in the professional world. The interchange of ideas will tend to broaden your mind and will keep you from falling into a hum-drum way of doing your work. Medicine is a progressive science, and to be successful practitioners, you must keep abreast of the times. To those of your *confrères* who are in good standing, be ever ready to extend the hand of good fellowship. Be considerate of their errors of diagnosis, and do not seek to make capital out of it to suit your own ends. When attending cases which present unusual symptoms, and which baffle your skill, do not hesitate to seek further advice, it will lessen your responsibility and will be of benefit to the patient. This will not in anyway depreciate your standing in his eyes, but will rather strengthen your position.

In all your actions be manly and straightforward.

> "To thine own self be true,
> "And it must follow as the night the day
> "Thou can'st not then be false to any man."

Let not those of you who are the first in the class think that your qualifications are greater than those who have been less fortunate, or that your gifts entitle you to greater success in after life than the rest. It is not always the most brilliant student who makes the most successful practitioner. The so-called "plodding" and slow student often has qualities hidden through the pressure of studies during his college course, which will shine only when opportunities present themselves, and often enable him to outstrip his more brilliant college friend. But whatever has been the success of each of you, let me caution you against making an improper use of such qualifications.

Do not think that with the closing of to-day's functions our interest in your welfare ceases; it goes forth with you as you leave this hall, and ever will continue through your career.

Do not let the knowledge you have acquired within the prescribed time of the college course lead you to imagine that you have exhausted the science of medicine. There is no greater stumbling block on the road to learning than self-satisfaction. Strive therefore to increase the store of knowledge you now have, by continuous study and practical work, and your labour will not be in vain.

You may congratulate yourselves upon graduating at this present period in the history of medicine and surgery, for no era has been marked by greater progress and advancement. Look into the field of surgery, and see what brilliant results have been accomplished by the skilful surgeon, how through his efforts many obscure diseases of the hidden organs of the body have been made clear and operations successfully performed which have been the means of saving many lives, in cases, which only a few years ago, would have been regarded as hopeless.

Consider the physician of the present day and how infinitely superior are his methods of diagnosing and treating diseases than those formerly accepted. Think what opportunities have been afforded you by the more recent advances of medicine, such as the certainty of recognising tuberculosis in its incipient stage, of treating malaria more intelligently, and of having methods (so recently elaborated by one of your teachers) at your disposal, of diagnosing typhoid fever in its earliest stages. It is owing to the untiring work of the bacteriologist that we have placed in our hands such means of so successfully treating our cases.

What grander work of the last two years has been accomplished than that of the bacteriologist in giving to us a means wherewith to battle more effectually than ever against a disease so dreaded and so awful in its results as diphtheria. The introduction of antitoxin therefore makes another mark in the progress of medicine.

It is our privilege and yours to reap the benefit of and to carry on the grand work accomplished by the many faithful workers in the field of medicine and surgery, and to apply their results, now no longer on their trial, but proved and accepted, to the welfare of patients entrusted to our care. Be not contented to rest here upon the labour of others; strive by your own endeavours to further the advance of science, and in doing so pursue your researches, in that field for which by your inclinations and qualifications you are best suited.

In conclusion, Gentlemen, I would ask you to remember always the nobility of your profession and let your just appreciation of its high standard be demonstrated in the honesty and faithfulness of your work. Consider the benevolence of its aim, the elevating character of its studies, in the pursuit of which all the best faculties of our nature are called into action. Let it be your ambition to excel in it, fearlessly encountering the difficulties it presents. Strengthen yourselves both mentally and morally by the discipline it affords in patient and sustained labour, and press forward in your new career with all diligence, not with a vain-glorious spirit, aspiring to out-do your fellows, but rather with a desire to bring honour upon your profession.

Let your work be honest and it cannot escape reward. Knowledge is power. Therefore embrace every opportunity of enlarging your mind, not only to gratify your own literary or scientific tastes, but to benefit mankind.

Let me on behalf of your *confrères* and in the name of the University, wish you a happy and prosperous career, and may health wait on you in carrying out the duties with which you have this day been entrusted.

THE DOCTRINE OF THE INTERNAL SECRETORY ACTIVITY OF GLANDS IN RELATION TO THE PATHOLOGICAL ANATOMY OF SUNDRY MORBID CONDITIONS.[1]

(OF DIABETES, ADDISON'S AND GRAVES' DISEASES, MYXŒDEMA, CRETINISM AND ACROMEGALY.)

BY

J. GEORGE ADAMI, M.A., M.D.

Professor of Pathology, McGill University, Montreal.

To remove an organ and study the effects of the operation is clearly an exercise in experimental pathology and only secondarily and indirectly a physiological investigation, while the greater the precision with which the course and symptoms of any morbid condition are studied, the more the study becomes a matter of science, a matter of pathology rather than of medicine. In other words, asked as a pathologist to enter into this discussion, I find that all other participants have trespassed into pathological territory. This is one of the penalties of sure advance in our common subject: the pathology of yesterday becomes the medicine of to-day, and I might add, the medicine of to-day yields place to the surgery of to-morrow. But this being the case, so as not to reiterate, I am impelled to make my contribution to this discussion a *resumé* of the results obtained in a branch of pathology which others are not likely to dwell upon. It is in many respects an unsatisfactory branch—a branch capable of testing rather than of originating any theory. I refer to morbid anatomy.

I propose, therefore, during the next few minutes, to lay before you what may be gleaned from the post-mortem room bearing upon this subject of internal secretion. But first it is necessary to call your attention to the very narrow limits of the information to be gained from a study of the gross and fine anatomy of diseased organs in this connection.

Morbid anatomy alone can tell us singularly little concerning alterations in function. The existence of lesions recognisable to the naked eye or under the microscope may support conclusions reached by other means. It can do little more. We know from experiment that three-quarters of the liver, for example, may be removed from the healthy animal with no pronounced disturbance of the bodily functions, that whenever one-fifth or less of the pancreas is left in the dog it may be weeks before diabetes shows itself, that only when fifteen-sixteenths of the thyroid are removed may the dog succumb. In this enormous reserve of material and force may truly be said to lie the secret of the continued existence of living beings. Thus the mere fact that the greater part of an organ is found wanting by the anatomist, or replaced by tissue of another nature, is not in itself absolute evidence that what remains of the organ is functionless or incapable of meeting the needs of the organism. So long as any considerable number of what may be termed the specific cells of an organ are to be determined we must proceed very cautiously in our reasoning; only when the destruction is absolute or nearly so are we on sure ground. Contrariwise, if the cells of an organ appear very slightly altered, while we are accustomed to argue that there has been but little disturbance of function, it is questionable whether we are justified in this opinion. So also if an organ like the thyroid be markedly hypertrophied, that is not in itself proof positive that there is accompanying increased activity and increased internal secretion. In the thyroid, for instance, the boundary line between pure hypertrophy and overgrowth of adenomatous nature is peculiarly vague. It may very possibly be that a simple adenoma of a ductless gland continues to supply an internal secretion; it is difficult to imagine that gland structure of almost perfect type can be present in the body without affecting the body at large.[1] Nevertheless we have no conclusive evidence that this is the case; hence, it is only after most exact and extensive histological study that we can advance any very secure arguments upon the existence of apparent simple hypertrophy, more especially of the ductless glands. The force of this statement will be seen when we come to discuss the bearing of disease of the hypophysis cerebri.

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[1] Being a contribution to the discussion upon "Internal Secretions," at the Triennial Medical Congress, Washington, May 5th, 1897.

Another matter that has to be taken into account, one that has until now received scant attention, is the existence of vicarious activity. Because one organ is seriously diseased it does not follow that the organism as a whole exhibits disturbances commensurate with the lesions in that organ; other parts may vicariously fulfil its functions. We have the well known example of total extirpation of so important an organ as the spleen being succeeded for years by good health. Here, presumably, the lymph-glandular tissue in general takes over the functions of the absent organ. There is the compensatory development of the parathyroids in athyrea, and further, the frequent, but not constant co-existence of atrophic disease of the thyroid and hypertrophy of the pituitary to which Boyce and Beadles (1) have more especially called attention. Similarly and curiously we meet with frequent persistence or enlargement of the thymus when either the thyroid or the pituitary body is the seat of disease. Thus not only is it a matter of peculiar difficulty in that class of diseases, which to-day we have specially to discuss, to determine which of the ductless glands is primarily and which secondarily affected, but the added difficulty besets us, that where the vicarious function is perfect and compensation is complete we may, in the apparently unaffected individual, meet with lesions of an organ—the thyroid for instance—of the same nature as, and every whit as extensive as, the lesions in well marked cases of those special forms of general disease which we are inclined to regard as the direct outcome of disease of that organ.

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[1] It is noteworthy how frequently in attempting to co-ordinate the anatomical data in the class of diseases now before us we are brought to regard the possibility—nay, probability—that neoplasms are not functionless (as we are too apt to consider them), but afford, it may be, an abundant, internal secretion.

Time after time this co-existence of apparently identical lesions in cases of relative health and pronounced disease places us in a quandary, time after time we find ourselves groping vainly in a maze of facts which seem to point in all directions of the compass. And when the facts flatly contradict each other one cause of discrepancy must be this vicarious activity. In passing, I may suggest that vicarious activity affords a possible explanation of the not unfrequent cases in which we have the eventual co-existence of more than one of the diseases under consideration. If, for example, the thyroid be the seat of atrophic disease the compensatory hypertrophy and over-action of the pituitary may lead to eventual affection of that organ.

Yet another consideration, seriously weighing upon the morbid anatomist, is that two opposite processes may produce a similar symptomatology, one that he can recognise, another that he cannot. If the glands afford an internal secretion entering the lymph and so eventually circulating through the system, we know that the ultimate use of the secretion must be to effect a chemical transformation of some substance in some other part or parts of the system. There are thus four possible conditions, (1) production of an insufficient amount of internal secretion of any gland in consequence of disease of that gland, and (2) the assimilation or production of an excess of that substance which normally is acted upon and transformed by the internal secretion in question. In both cases there will be a heaping up in the system of the substance ; in both cases there may be the same train of symptoms. In the one case the gland or glands may show the clearest signs of disease; in the other they may appear normal. The morbid anatomist may in time discover collateral disturbances distinguishing these two states; at present he cannot adequately. In one case of diabetes he finds the pancreas unaffected, in the next it is extensively diseased. Unaided by experimental pathology he is quite incapable of determining the important *rôle* played by this organ in regulating the sugar supply of the organism and in the production of diabetes. Similarly there may be an accumulation of the internal secretion, either due to (3) hypertrophy of a gland, or (4) not associated with recognizable glandular change.

In short, gentleman, I fear that I stand before you as a kind of reversed contrary Balaam. Summoned to bless—to illumine this discussion—I can only curse (as I take it all my predecessors must have done who have attempted to reconcile the anatomical results in the class of cases now before us) and can but point out to you the darkness that is upon the face of the deep. But happily there is this to be said to the credit of the morbid anatomist that the demonstration of this darkness is of the highest value as indicating the lacunæ in our knowledge and suggesting the various factors that have to be taken into consideration and carefully studied in order that we may gain a comprehensive knowledge of this intensely interesting and valuable subject of internal secretion and glandular function. It is in itself a step towards higher things to feel acutely our own ignorance.

And then, perhaps, things are not quite so black as here painted. While it may be that I am overbold—it may also be that this darkness but precedes the dawn; that facts which seem so flatly to contradict each other can, in the growing light of experimental pathology, already be seen to range themselves in an orderly manner. Accepting the postulates, first, that the glands of the body afford an internal secretion capable of acting upon and transposing some substance or substances produced or assimilated by other regions of the body, and, second that, proceeding with due caution, we can utilise the results of anatomical and histological studies, then, applying the considerations which I have just urged, we must recognise the possible existence of three orders of conditions, each order being capable of further subdivision into two well marked groups.

It would seem that we have to deal with :

Changes Associated with Symptoms of Disease.

I. Glandular Inadequacy.—Excess of substance acted upon by the internal secretion of a gland, without due compensation.
  (1.) *Absolute :* Altered condition of gland leading to diminished activity and diminished internal secretion.
  (2.) *Relative :* No disease or alteration of gland but excessive production or assimilation of the substance acted upon by the internal secretion.

II. Glandular Over-Activity.—Excess of internal secretion withoute ompensation.
  (1.) *Absolute :* Altered condition of gland leading to increased activity and increased pouring out of internal secretion.
  (2.) *Relative :* No disease or alteration of gland, but diminished production or assimilation of the substance acted upon by the internal secretion of that gland.

Changes Unaccompanied by Symptoms of Disease.

III. Compensation.—Lesions of gland or altered systemic condition unaccompanied by symptoms.
  (1. Altered condition of gland leading to (*a*) increase or (*b*) diminution of internal secretion, with due compensation.
  (2.) *Gland unaltered* (*a*) increased or (*b*) diminished production or assimilation of substance acted upon by internal secretions, with due compensation.

Let me here emphasise the fact that I do not pretend that this table includes every possible condition leading to local or general disturbance of these glands affording an internal secretion, and leading to the symptoms most often associated with disease of these glands. For example we know from experiments with phlorizin that glycosuria may, among other things, be the result, not so much of increased production of sugar as of increased removal of this body through the kidneys. Such cases are not embraced in this table. Again, what I may term compound cases as, for instance, of glandular inadequacy, in part from disease, in part from increased production of the substance acted upon by the secretions are presented only by implication. All I urge is, that this table, conforming with what experiment has shown may occur, may very possibly be utilised to explain the apparently contradictory revelations of the post-mortem room.

I would now proceed rapidly to review those conditions, local and general, concerning which we have already a modicum of knowledge and which fall within the scope of to-day's discussion.

THE PANCREAS AND DIABETES.

Let me in the first place take into consideration lesions of the pancreas and their relationship to diabetes. Much more than a century has passed since attention was first called to the pronounced changes to be seen in the pancreas in some cases of diabetes. We all know that not until 1889, when Von Mering and Minkowski in Germany, and de Dominicis in Italy, published the results of their researches did the belief in the existence of a pancreatic diabetes begin to become generalised, but even at the present moment the fact that two cases, closely resembling each other clinically, may post-mortem show, the one, extensive pancreatic disturbance, the other, an apparently healthy pancreas, creates great confusion.

What then are the facts gathered so far as to the relative frequency and the nature of the lesions of the pancreas which may be associated with diabetes?

We have at least three careful studies upon this subject, those of Hausemann (2), Williamson (3) and Dieckhoff (4), and all demonstrate that three conditions may be distinguished (1) extensive pancreatic disease with associated diabetes; (2) extensive pancreatic disease without diabetes; (3) diabetes unassociated with recognisable pancreatic disease. Hansemann from a careful investigation of the records of the Pathological Institute and the Augusta Hospital at Berlin, found that the first condition (of pancreatic disease with diabetes) is more common than the two others combined. It may be that in Berlin the consumption of much beer predisposes to the pancreatic form of the disease, it may be that the material upon which Hansemann worked was imperfect to this extent, that full care was not taken to distinguish between extensive and extreme destruction of the pancreatic tissue, but it will, I think, be the experience here, as it was that of Williamson in England, and Dieckhoff in Rostock, that advanced pancreatic disease, associated and unassociated with diabetes, are to be encountered the one but little more frequently than the other.

This much, however, stands out very prominently that where in diabetes the pancreas is found affected, the morbid process within the gland is some one or other form of atrophy and destruction of the gland substance. Most commonly it is a form of periacinous fibrosis, originating it would seem secondarily to arterio-sclerosis, in which with thickening of the arterial walls there is malnutrition of the gland cells, atrophy and, what I have elsewhere termed, replacement fibrosis. Other forms of atrophy and fibrosis have not infrequently been observed—simple atrophy, congenital syphilitic fibrosis, obstruction of the ducts with calculi, dilatation of the ducts and atrophy of the gland tissue, scirrhous cancer of the pancreas, and I have found recorded five cases of necrosis, or hæmorrhagic necrosis (two by Fitz and a third, a case under Drs. Bell and Finley, in my own experience at the Montreal General Hospital)

There can, therefore, be no question that the pancreatic lesions found in some cases of diabetes are such that there must be a marked diminution in the secretory activity of the gland. To this extent, in this one class of cases the results of autopsies are clearly in accord with the results of experiments. We have here examples of relative glandular inadequacy brought about by altered condition of the pancreas leading to diminution of internal secretion.

Examples of diabetes unassociated with disease of the pancreas are so well known that I need but refer to them. While such are difficult to explain from purely anatomical considerations the fact that they are found, and found relatively frequently is, in itself, an evidence that glycosuria is of at least a two-fold origin. That they are found is in conformity with the results of experiments, experiments which, on the whole, must be regarded as proving that there can be heaping up of sugar in the organism beyond the transforming power of the pancreatic internal secretion, or otherwise an incomplete burning up of the sugar. If this heaping up be in general due to increased glycogenesis, increased production of sugar, we should expect to find some evidence of increased activity of some glycogenetic organ, and here the recent researches of Glénard (5) and Triboulet (6) tend to show that this may be the case. Contrary to the older and generally accepted teaching, Glénard finds that clinically in over sixty per cent. of diabetics, there is evidence of some hepatic enlargement. Anatomically he finds that three conditions may be recognized, each possibly a stage in one morbid procees, namely, hyperæmia, general cellular hypertrophy (hyperplasia) and hypertrophy with cirrhosis (hypertrophic cirrhosis). Thus while I will not say that anatomical considerations prove the existence of my second subgroup in this connection, I must point out that the existence of this class of cases of diabetes without adequate recognisable pancreatic disturbance, is best explained on the supposition that there may be excessive production or assimilation of sugar with accompanying relative pancreatic inadequacy.

There is yet a third group of cases to be considered, that of extensive atrophic disease of the pancreas without diabetes. Here we have to proceed cautiously in our reasoning. As I have already indicated, Sandmeyer (7) has found that if only one-fifth to one-ninth of the organ be left in the dog, it may be months before sugar appears in appreciable quantities in the urine. Vaughan Harley (8) gives an éven smaller amount, namely, one-fifteenth, but evidently he refers not to the eventual development of diabetes, but to its onset within a few hours. We can thus state that so long as from one-ninth to one-fifteenth of the glandular tissue of the organ is functional, for so long glycosuria need not manifest itself in the dog. There is no valid reason why we should not apply these facts to the human being. Hence so long as a very small proportion of fairly healthy gland tissue is left, we have a satisfactory explanation why diabetes should not show itself, even though the major portion of the pancreas exhibits fibroid and atrophic or neoplastic changes. There are, however, aspects of that subject not capable of so simple an explanation. I remember my friend, Dr. H. D. Rolleston, of St. George's Hospital, showing to me a series of sections of the fibroid pancreas taken from both diabetic and non-diabetic cases, from which the only conclusion to be reached was that a given extent of fibrosis might or might not be associated with diabetes. Again, Hansemann has called attention to cases of complete replacement of normal pancreas by a diffuse cancerous infiltration. He seeks to explain these by the hypothesis already indicated, that the cells of a primary new growth of a ductless gland may continue to furnish an internal secretion. This may or may not be the case. Where there is primary cancer of the hepatic parenchyma, the new growth in the liver may be devoid of bile, the secondary growths are without exception free from bile. A more simple explanation of these and other examples of complete or almost complete destruction of the pancreatic glandular tissue is that of compensation, whether by vicarious function of Brunner's and other glands (the duodenal glands have frequently been found enlarged) or by diminished assimilation or production of sugar.

THE SUPRARENAL BODIES AND ADDISON'S DISEASE.

We meet with an identical series of cases in connection with another organ in which experimentally the existence of an internal secretion has been fully demonstrated. We may have (1) Addison's disease associated with disease of the supra-renal bodies, (2) Addison's disease with intact supra-renals, and (3) extensive, if not complete, destruction of the supra-renal bodies without the symptoms of Addison's disease.

Here, as with the pancreas in diabetes, the affection of the gland in Addison's is some form of atrophy or destruction of the specific gland tissue. Most frequently, I need scarce say, the change is tuberculous and necrobiotic, resulting in the disappearance of the gland tissue and its replacement by caseous material. But cases are on record of simple atrophy, hæmorrhagic necrosis and malignant growth of the bodies associated with or leading to all the symptoms of Addison's disease. In the vast majority of cases both glands are affected, but cases are on record (I have come across one such) where only one of the bodies has been the seat of recognisable disease. Of the three conditions above mentioned the most frequent found is the association of the disease with complete or almost complete destruction of the gland. So frequent is the association that the attempts to explain away the other two rare states of Addison's disease with intact suprarenal bodies and suprarenal disease without the Addisonian symptoms have been almost painful in their ingenuity. Yet undoubtedly well authenticated cases are on record of both of these conditions.

We have in this connection singularly full statistical collections of cases That of Lewin (9) is well known; he collected accounts of 285 cases, of which 211 showed caseous lesions of the suprarenals (74 %). Gilman (10) found an even greater proportion of either primary or secondary tuberculosis (80 %); in the remaining 20 % there were either other forms of atrophic disease or absence of recognisable disturbance.

The existence of cases of Addison's disease without obvious disease of the suprarenals is generally acknowledged. Lewin found that as many as 12 % of his cases were of this type. The explanation generally given is that in these there had been alterations in the neighbouring semilunar ganglia and abdominal sympathetic. Certainly disturbance of the nervous system, and especially of the sympathetic, does lead to pigmentation of the skin, We see this in cases of hysteria and again in Graves' disease, in which from whatever cause (I shall speak of this later) we have most marked nervous changes, but I must confess that I feel some little impatience towards the upholders of this semilunar ganglion theory of Addison's disease, for scarce two of them describe the same order of lesions. Most of the changes described would appear to be quite common in the adult dying from other causes; thus Hale White (11) found that examining 33 semilunar ganglia removed indiscriminately, if we leave out of account 3 perfectly normal taken from young children, 24, or.80 per cent of the remainder exhibited more or less extensive degenerative changes with frequent presence of granular masses of pigment. Dixon Mann (12) also making a careful comparative study of the abdominal sympathetics and semilunar ganglia from two cases of the disease and from the unaffected individual came to a like conclusion. He found them not more affected than are those of other individuals. Under the circumstances, therefore, I see no valid reason why cases in which the bodies are found apparently unaffected may not, in the light of our present knowledge, be most satisfactorily classed as possible examples of relative glandular inadequacy of the second order. This suggestion may to some appear revolutionary; but let me reiterate my main argument: We acknowledge that glands like the suprarenals produce an internal secretion: We must inevitably admit that the function of such secretion is to affect a chemical transformation of some substance or substances distributed in other parts of the body. We must admit that when, for example, the suprarenal bodies are diseased, or removed, some, at least, of the symptoms that follow are due to the absence of the internal secretion, or, in other words, are due to the accumulation in the system of the substance or substances acted upon by the internal secretion. The same symptoms must be produced whatever the cause of the accumulation of the substance or substances, whether by diminution of the internal secretion or by excessive production or assimilation of the aforesaid substance or substances. When, therefore, a morbid condition, such as diabetes or Addison's disease, which may be caused by destruction of a gland is found to exist without recognisable disease of that gland, a very possible explanation of the condition is what I have termed relative glandular inadequacy due to excessive production or assimilation of the substance acted upon by the internal secretion. I would but ask you clearly to picture this, that in diabetes and Addison's disease it is not the internal secretion that causes the symptoms, but, if experimental data are to be trusted, the lack of the same—and that this lack may be absolute or relative.

I am far from suggesting that the whole corpus of symptoms will be the same in both conditions. Thus as Harley and others have pointed out where the pancreas is atrophied there are profound digestive disturbances not necessarily accompanying diabetes unassociated with pancreatic disease. But I am inclined to think that the cardinal symptoms in both will closely resemble each other.

A few words only are necessary concerning affections of the suprarenal bodies without symptoms of Addison's disease. If bronzing be required as the one essential symptom then cases of tuberculous disease of the suprarenal without 'Addison's' are fairly frequent. Addison himself noted this condition. We must however, it seems to me, acknowledge with Chvostek (13) and numerous previous observers, that bronzing is but one of a group of symptoms even though we be not prepared to accept Bedford Fenwick's (14) suggestion that bronzing is especially connected with disease of the cortical layer. Leaving this category out of consideration, cases of extensive atrophic or neoplastic disturbance of both suprarenals without Addison's disease are few in number, far fewer than the cases of extensive pancreatic disease without diabetes, and in general the descriptions given are not sufficiently exact to be relied upon. Nevertheless they exist. Greenhow (15) apparently met with a case of almost complete atrophy without symptoms, and, in 1050 autopsies upon subjects dying from diseases other than Addison's, Rolleston (16) met with an example of caseation of the right and atrophy of the left suprarenal and with three cases (under the age of forty-five) in which both were peculiarly small. All these were without symptoms intra-vitam. There are more frequent examples recorded of cancerous growth destroying both bodies without noticeable symptoms. There is a possibility that the new growth here was so rapid and so recent that symptoms had not time to develop. In the atrophic and tubercular cases it is not so easy to accept this explanation. Therefore, I am inclined to believe that compensation may occasionally manifest itself in man as it does occasionally in animals which have suffered complete ablation of both organs.

THE THYROID GLAND AND MYXŒDEMA.

I have already approached the limits of the time allotted to me and there is yet for me to pass in review the gland and its affections, which in this connection have created the most general interest. I refer to the thyroid and to the conditions of myxœdema, cretinism and exophthalmic goitre.

From an anatomical point of view there is little for me to say in elucidation of the pathology of myxœdema beyond the one all-important statement that, with very rare exceptions, there is discoverable a well marked atrophy of the thyroid. About this all pathologists are agreed. In the majority of cases the atrophy is peculiarly extensive, the specific cells of the gland being replaced by fibrous tissue; in some it is not so far advanced and areas may be found, not merely of degenerated remains of the vesicular epithelium, but of vesicles which by the superabundant proliferation of their epithelium would seem to be undergoing a compensatory hypertrophy. Yet where these are present they are localised and few in number; the main mass of the organ shows atrophy. A few cases only are on record, like that of Gulliver (17), where there has been a cancerous metamorphosis or replacement of the parenchyma.

That in these cases the myxœdema is associated with diminished internal secretion of the gland is, I need scarce say, substantiated by the good effects of treatment by thyroid extract or thyroid feeding.

It must next be asked whether myxœdema can show itself with apparently intact thyroid, *id. est*, whether there are any cases which may possibly be explained by excess of the substance or substances acted upon by the internal secretion of the gland. The literature is peculiarly silent upon this point. I can find no example of autopsies upon cases diagnosed clinically as myxœdema in which the gland was found normal, or but little affected. I can only recall an autopsy upon a patient of Dr. J. Stewart at the Royal Victoria Hospital, in which I found a large cancerous tumour of the pituitary. Here there had been a myxœdematous swelling of the hands, and of other regions to less extent, without bony overgrowth, and no change was found in the thyroid. The condition, however, was not sufficiently advanced to deter Dr. Stewart from diagnosing tumour of the hypophysis. A somewhat parallel case (of apparent atrophy of the pituitary), in which the symptoms of myxœdema were more marked, is recorded by Codd (18), but the anatomical details are given very briefly. Similarly we possess no exact records of atrophic disease of the glands unassociated with myxœdema. I can only point out that it is not uncommon in the aged who show no signs that can properly be regarded as myxœdematous—unless senility itself be regarded as such—to find a condition of very extensive chronic interstitial thyroiditis (as it may be termed) with arterio-sclerosis, calcification and hyaline changes, with retrograde or pseudo-embryonic type of vesicles. I have come across more than one case of this nature. There can be no doubt that here the secretory activity of the gland tissue must be very greatly reduced. If, however, we turn to cases in which by surgical means the equivalent of complete atrophy, namely, complete thyroidectomy, has been attained, we then possess abundant evidence that the thyroid proper may be absent without myxœdema necessarily intervening, and almost as abundant evidence from the more recent researches that the absence of symptoms is connected with vicarious activity on the part of other organs, and especially of the parathyroids. These may be regarded either as true accessory thyroid tissue, or as distinct organs, according to the point of view of the individual. Certainly when the thyroid is functional they do not acquire the full characters of thyroid tissue, but similarly there are often within the healthy organ scattered areas of embryonal tissue. This can be said with precision, that they are independent masses of tissue, apparently most closely related to the thyroid, which are at times capable of development to, or towards, the adult type of the gland, and of assuming vicarious functions. In like manner the pituitary body can at times undergo very definite compensatory enlargement. This was first demonstrated experimentally by Rogowitsch (19), while Boyce and Beadles more especially have added to our knowledge of its enlargement in cases of myxœdema, cretinism and cachexia thyreopriva.

An interesting point in this connection, to which attention has been drawn by Rogowitsch, is that the rabbit, from which the thyroid can be removed with impunity, has a pituitary body relatively five times as large as that of the dog, in which ablation of the thyroid leads rapidly to symptoms of acute athyrea; or more correctly, the relationship of thyroid to pituitary is 3 to 1 in the former, 15 to 1 in the latter animal.

On the whole, therefore, anatomical data in connection with myxœdema and cachexia thyreopriva support and are capable of explanation by this doctrine that where glands afford an internal secretion, the development or non-development of symptoms of disease depends primarly upon the relative amount of internal secretion produced and of the substance or substances acted upon by the same.

CRETINISM.

Cretinism presents a far more complicated histological picture—so complicated that Bircher (20) argues with very considerable force that "cretinic degeneration, as also dwarfism and chondrodystrophia fœtalis hypoplastica have no ætiological connection with the functions of the thyroid," Bircher, however, fails to recognize that if we accept the existence of an internal secretion, we must also admit the presence of substances upon which that acts, and he cannot see that widely contrasted anatomical conditions may lead to the same train of symptoms. We must, I think, abide by the experimental and clinical evidence that removal of the thyroid in the young leads to a condition undistinguishable from cretinism. This being so, we find that in some few cases of typical cretinism the thyroid is completely absent, in a large number it is small, in a yet larger number according to Von Eiselberg (21) and Kocher (22) there is a goîtrous condition present, while according to Bircher the goîtres may be of all possible forms, from simple hyperplastic through soft (parenchymatous) and cystic to fibroid. The only point clearly to be made out from Bircher's very destructive criticism is that while in several cases the thyroid has been found of normal size, apparently no case exists in which by microscopical observation it has been found of normal structure. Considering the amount of material he brings forward this is rather remarkable. I further gather that his statements as to the frequency of the various forms of goître are based upon examination of the living and not upon post-mortem or surgical material. This seriously weakens his case. Beyond this I will not venture to travel. Bircher's statements require to be dealt with by one in authority, and I await with interest Dr. Osler's presentation of the matter.

EXOPHTHALMIC GOITRE.

I will now briefly refer to the condition which presents a series of symptoms so remarkably contrasted with myxœdema—which also anatomically presents an equal contrast. There is to be found in exophthalmic goître, as Greenfield (23) has shown, and as is now generally accepted a characteristic hyperplasia of the thyroid parenchyma, complicated, it may be in later stages, by increased fibrosis. The one question of immediate concern here, is whether from this we can safely deduce that there is accompanying increased internal secretion. As I have already hinted, I do not think that from anatomical considerations alone we can safely make this deduction. There is, however, an important fact in favour of such deductions, namely, the strong likeness between the primary glandular changes in Graves' disease and those described by Halsted (24) and others as occurring in the compensatory hyperplasia of the thyroid after removal of large portions of the gland; and if, together with the anatomical changes, we consider the favourable effects which so often follow removal, destruction, or diminution in the blood supply of portions of the hypertrophied gland in this disease—of operations which must lessen the internal secretion—it is difficult to arrive at any other conclusion than that in exophthalmic goître there is increased internal secretion, and that this plays a singularly important part in the development of the symptoms. Whether this be primary or secondary to lesions of the central nervous system—of the restiform bodies for example, our present anatomical data are insufficient to decide—as again they are incapable of deciding whether the increased secretion is altered or unaltered in quality. I may here note that as Joffroy and Achard (25) have indicated the symptoms of parenchymatous and adenomatous goître are at times curiously allied to those of exophthalmic goître. Indeed, together with Vanderwelde and le Bœuf, they hold, I think without due cause, that there is nothing anatomical to distinguish the one condition from the other. That the one condition may lead to the other is a matter of clinical experience. As Dr. Shepherd has pointed out to me extirpation of the goîtrous nodules or cysts leads to the almost immediate amelioration of the symptoms.

The development of exophthalmic goître without hyperplastic alteration of the thyroid is a matter concerning which there is little anatomical evidence. I find one case recorded by Joffroy and Achard in which the gland was of normal size and, while not normal histologically, presenting nevertheless a series of changes wholly distinct from Greenfield's classic description. The vesicles instead of being small and corrugated, were enormously distended, instead of absence there was abundance of colloid material, in place of a columnar and proliferating epithelium, the lining cells were flattened. Not a few believe in the existence of Graves' disease without goître. Among recent writers Buschan (26) especially holds this view, but save in the above case I cannot find anatomical substantiation for the opinion. Clinically Graves' disease without enlarged thyroid has very frequently been noted ; in some cases enlargement supervenes, in others it does not, but there may well be increased activity of the gland without marked enlargement. All that can be said at present from this evidence is that apparently the condition does occur. So also evidence as to the occurrence of marked hyperplasia and presumably increased secretion without symptoms is not so full and precise as could be wished. I can only point out that if adenomatous nodules in the thyroid produce any internal secretion then, while many cases of adenomatous goître show a train of symptoms somewhat allied to exophthalmic goître, and while a few cases pass on to undoubted Graves' disease, many on the contrary appear to last for years without symptoms. And in autopsies upon those dying from diseases, other than exophthalmic goître, we find a wide variation in the condition of the thyroid, from atrophy on the one hand to a condition not far removed from what Greenfield and others describe in association with exophthalmic goître.

Altogether, therefore, while not prepared, from general as from anatomical considerations, to state positively that exophthalmic goître is in all cases primarily due to increased thyroid secretion, I cannot but admit upon the whole that the facts can be best reconciled by assuming the existence of relative increase in glandular activity.

THE PITUITARY BODY AND ACROMEGALY.

Finally some few words must be said concerning that strange collection of symptoms and anatomical changes to which Marie has given the name of acromegaly. Yearly it has become more clearly recognized that the term indicates a definite disease although there is a liability towards confusion with gigantism on the one hand, and on the other with the remarkable overgrowth of bone in certain cases of chronic disease (mainly of the lung) which again Marie was the first to group together under the title—voluminous, and in other respects unsatisfactory—of hypertrophic pulmonary osteoarthropathy.

Here again the remarkable trio of conditions forces itself upon our notice ; there may be acromegaly with disease of the pituitary, acromegaly with apparently unaffected pituitary and extensive disease of the pituitary without acromegaly. Where there is acromegaly, there in by far the greater number of cases the glandular portion of the ody is diseased. It is true that the condition is rare. Between 1890 and the present time less than thirty affected subjects have undergone post-mortem examinations. Leaving aside from lack of time sundry interesting observations upon the state of the thyroid and thymus, I may say that this one gland alone—the pituitary—has been repeatedly found altered, the alteration being especially in connection with its anterior or glandular portion. Out of 24 necropsies upon cases stated to be acromegaly, Tamburini (27) the latest collector, finds that in 17 or over 70 per cent. the pituitary has been found diseased. The remaining 7 are subjected by Tamburini to severe criticism with the result that he rejects 2 on the ground that the condition had only been recognised clinically for a few months and no microscopical examination had been made. He presumes that time had not been sufficient for the development of naked eye changes. Three other cases he holds to have been osteoarthropathy. There remain two which he could not definitely reject and consequently classified as doubtful. So far as I can follow Tamburini he is strongly of opinion that morbid changes in the hypophysis cerebri are essential to acromegaly. The majority of observers do not accept this extreme view, and with them I am inclined to believe that here as certainly obtains in diabetes and Addison's disease, there may be typical symptoms without recognisable involvement of the pituitary.

But granting this much, that in the majority of instances the gland is diseased, it is difficult to advance much further, for there is a curious discord concerning the exact nature of the alterations in the pituitary body. In about one half of the cases hypertrophy of the organ is described. Stroebe, (28) Tamburini, Boltz (29) and others of later date conclude that the change is adenomatous, Marino (30) Dallemagne (31) and Gauthier (32) describe a peculiar cystic degeneration, Boyce and Beadles a cystadenoma, while in another of Dallemagne's cases and in Wolf's (33) there was clearly sarcoma, and in Bury's (34) a 'glioma.' What are we to conclude? Is acromegaly accompanied by an increased pouring out of internal secretion, or the reverse? Mere hypertrophy and possibly adenomatous overgrowth might lead to increase, but surely degenerative changes and sarcoma can have no such effect.

It is difficult to reason by analogy, and if we attempt this and seek to base any argument upon what occurs in disease of the gland, which anatomically is most closely related to the pituitary—namely, the thyroid—we are led rather to the conclusion that acromegaly must be due to arrest of function of the former. That is to say there is a certain correspondence between the changes occurring in the connective tissues in myxœdema and those affecting the bone, and to some extent the subcutaneous connective tissues in acromegaly.

On the other hand the pituitary is nearly always found enlarged and hypertrophied in general gigantism as distinguished from this localised acromegalic gigantism. It is difficult to reconcile such general gigantism with diminished activity on the part of the enlarged hypophysis, while again the contrast may be pointed out between gigantism and cretinic dwartism. Tamburini, and independently Massolongo (35) have attempted to coordinate the contradictory anatomical discoveries by suggesting that two stages of the disease may be recognised, a first in which the hypohysis undergoes hypertrophy, and is in over-action, which may give place to a second in which the hypertrophied tissue either undergoes atrophy or adenomatous or sarcomatous change. The suggestion is seductive, but for the present must be regarded merely as a suggestion.

Briefly therefore, our knowledge in this connection is miserably inadequate, and experiments have so far been without result. We cannot say whether in acromegaly there is increased or diminished internal secretion. While the change in the pituitary appears often to be primary, we cannot with certainty lay down that this is the case. It has only to be added that if wo admit that lesions of the pituitary are associated with acromegaly, we must also admit that compensation can occur, for there is considerably over a score of cases on record of hypertrophy, adenoma and cystadenoma of the organ, all of considerable size and presumably of long duration which had developed without signs of the disease in question.

Thus to conclude a long discourse, which in justice to the subject I could not well shorten: I have here, gentlemen, followed a single train of thought. Some may find it suggestive, to some it may be so simple as to be specious, so wide in its embrace that its very comprehensiveness is its damnation. I can only point out that what is here written has been already more or less definitely suggested by various writers in this country and elsewhere, in connection with most, if not all, the conditions here discussed, and impress upon you that, if we are prepared to accept the results of experimental research and to believe in the existence of internal secretions, then, inevitably, we must be led to some such views as those brought forward in the course of this paper.

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DOCTORS AND THE LAW.

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It does not come within the scope of this paper to discuss the respective origins of medicine and law nor to compare the professions one with the other, as might be inferred from the foregoing heading The law, deriving its origin from the relations between the members of the primeval family and of the village community, protects and safeguards the individual by defining his rights and duties. It to that extent therefore protects the person. Medicine, on the other hand, I use the term in its widest sense, has a more intimate relation with the person, inasmuch as by saving and protecting human life, it assists in enabling the individual to continue to enjoy the rights preserved by the law. Both seek the preservation of society, but in widely different manners. It does not follow however that they are upon an equality. Communities have lived without medicine. Law in some form or other is indispensable to their existence. Hence the latter is always the superior, though from its nature medicine may be the more noble. While the medical profession therefore, may be governed by its own rules and ethics, they do not and cannot effect society as a whole. Notwithstanding and irrespective of them, doctors are governed by the law, as fully and as absolutely as other members of society. Owing however to their intimate relations with the "person" of the individual, legal questions of unusual interest and difficulty arise.

So essential has the medical profession made itself to society and its immunity from disease, so valuable has its science become for the detection of crime, that its members may frequently be viewed in the light of public officers. The conflict between public and private duty is frequent cause of perplexity to them. In this paper, it is not my intention to discuss what may be termed Legal Medicine, or Medical Jurisprudence. That is a subject for the doctor rather than the lawyer. That is medicine as applied to law. I propose to deal with law as applied to doctors, to discuss the position of the doctor as respects the law—his personal rights and liabilities, as he performs some of his varied professional duties. He occupies a distinct place in society. Society, in virtue of statutory or common law places upon him certain obligations in addition to those of an ordinary member of it.

The subject is a broad one and difficult of condensation within the limits of a paper suited to the occasion. I shall briefly deal with the following principal subjects. The Doctor as a Witness, His duty in relation to Acts of Status, His Civil Responsibility and His Criminal Responsibility. For convenvience I have placed these under four chapters.

CHAPTER I.

THE DOCTOR AS A WITNESS.

(*a*) *The Subpœna.*

Every person is compelled to appear before the Civil Courts, whenever a copy of writ of subpœna is served upon him at least one clear day before that fixed for his examination, this delay of one day being increased at the rate of one day for every fifteen miles when the distance exceeds fifteen miles. (C. P. 244). If he does not obey the subpœna he is liable to a fine of not exceeding $40.00. Independently of this, the party who summoned him may have damages for his default and imprisonment for contempt, if it lie. (C. P. 249). If, however, he must disburse something to arrive at the place of examination he is under no obligation to obey the subpœna unless a reasonable amount is tendered to him at the time of its service.

(*b*) *The Doctor as a Witness on Matters of Opinion.*

He can only be summoned "to declare what he knows or produce some document in his possession, or do both." (C.P. 245). It would therefore appear, under the law, that he cannot be compelled to testify as to a matter of opinion. The public have no right to demand a man's services as an expert unless he consents thereto. They have, however, the right to demand his evidence upon facts which have come to his knowledge, no matter by what means. It is not for him to judge, whether he can testify to facts in the particular case or not. It frequently happens that amid the complications of facts and names in a busy man's daily life he completely forgets the facts, until reminded of them in the witness box. If he wishes therefore to avoid the possibility of a fine he must obey his subpœna and after ascertaining in open court that only his opinion is desired, he may refuse to give it unless his terms are complied with.

Once put upon the stand as a skilled witness his obligation to the public ceases and he stands in the position of any professional man consulted in relation to a subject upon which his opinion is sought. It is evident that the skill and professional experience of a man is so far his individual capital and property, that he cannot be compelled to bestow it gratuitously upon any party. Neither the public, any more than a private person, have a right to extort services from him in the line of his profession, without adequate compensation. On the witness stand, precisely as in his office, his opinion may be given or withheld at pleasure, for a skilled witness cannot be compelled to give an opinion, nor be committed for contempt if he refuses to do so. Whoever calls for an opinion from him in chief, is under obligation to remunerate him, since he has to that extent employed him personally; and the expert at the outset may decline giving his opinion until the party calling him either pays, or agrees to pay him for it When, however, he has given his opinion he has now placed it among the *res gestes* of the evidence, and can not decline repeating or explaining it on cross-examination. Once uttered to the public ear of the court, it passes among the facts in evidence, and counsel may use it as they please, without any further compensation to him. The point of declining to give it gratuitously must be made, if at all, at the opening of his examination in chief, and will avail him nothing if delayed until the cross-examination. He has been called to be consulted in open court by somebody and from that party alone has he a right to claim a compensation for his services (Ordronaux. Med. Jurisp., § 114, 115).

The medical witness is not permitted to read his text-books in the witness box. But he may refer to them to refresh his memory (Roscoe's Cr. Ev. p. 137. Taylor Evid. vol. 2, p. 946. Ordronaux Med. Jurisp. par. 122). In cross-examination however, quotations from well known authors may be read by counsel and the witness asked whether he agrees or disagrees with them.

It is not within the scope of this paper to discuss the bearing and conduct of the doctor in the witness box. That is a matter rather for a doctor to discuss than a lawyer. But it may be my duty to refer in passing to the loss of prestige which expert evidence is daily suffering. I do not say that it is confined to the medical profession. It is caused by the apparent ease with which contradictory expert evidence and more particularly medical evidence, may be obtained. Medical men may reply that they are led astray by the legal profession. No doubt there is some force in the argument. Lawyers naturally will take advantage of any tendency which for the time being will militate in their favour. The predisposition to disagree is as strong among medical men as among the legal fraternity. I do not think the inaccuracies of science are altogether to blame. The popular distinction however remains between the "liar, the d—d liar and the expert," and the sooner its cause is removed the better. It seems to me that the only practical solution of the difficulty would be a law requiring a board of experts to be appointed by the court in each instance independent of and above the influence of either side. (Ordronaux, Med. Jurisprudence, • 114, 115).

(c) *The Doctor as a Witness on Matters of Fact.*

If he be a witness of fact he can claim no privilege but is compelled to answer all questions put to him relevant to the matter at issue, no matter whether he has obtained the information professionally under the pledge of secrecy or otherwise. (C. P. 275, Browne vs. Carter, C. S., Berthelot, J., 1865, 9 L. C. J. 163). In this respect he is not accorded the same favour as the clergy, lawyers and notaries. If he be in doubt as to the relevancy of the question, or as to whether he should answer it he may appeal to the presiding judge, whose decision he must accept without question. (Taylor, Med. Jurisp. p. 29). If he be in good faith and without malice he need not fear the consequence of his evidence, no matter how prejudicious it may be to the reputation of the party. Justice demands that he should give all his information on all points at issue, absolutely without reservation. Justice protects him from the consequences thereof and declares it to be a privileged communication. (C. R. Labbe vs. Pidgeon, 1 R. de J. 135; R. J. Q. 7 S. C. 27). It is not for him to inquire into the regularity of the proceedings, as for instance a Coroner's inquest. (*Id*).

(d) *Fees for Evidence in Civil Matters.*

It sometimes happens, I regret to say, that medical men are compelled to attend at court for hours at a time before their evidence is taken, the small fee for such attendance by no means repaying them for their loss of time. It is rarely, however, that physicians cannot make some arrangements with the lawyers who subpœna them, to give their evidence at a fixed hour. The professional tax amounts to four dollars a day. Lawyers, doctors and engineers are all in the same position. I know it is a matter of complaint among medical men, that they are unable to ascertain what is due them and even unable to collect this amount, when ascertained. I may say, that it is the custom, if a witness has attended even for a few minutes in the morning and has left on ascertaining that he would not be required, to tax him for one half day. If he again attends in the afternoon with the same result, it is the custom to tax him for the whole day. He is ordered by his subpœna to attend from day to day until heard.

On leaving the box finally, his proper course is to at once ask the clerk for taxation. He will ask him how many days and half days he has attended and he is permitted to reckon them upon the principle above laid down. The clerk may swear the witness as to his attendance if either party demands it. The judgment when, rendered, condemns one or the other of the parties to pay the costs. The taxation of a witness is a judgment against the party who called him and may be executed like one, irrespective of the lawyers (C. P.281). Application should be made to the lawyer who summoned the witness. If the application is unsuccessful the witness may at once apply to the clerk for an execution.

(*e*) *Fees in Criminal Matters.*

Under a special Order in Council, the following is the tariff for expert witnesses in criminal matters.

Residents of the Cities of Montreal and Quebec for each complete day of attendance at court	$10 00
Residents of the Cities of Montreal and Quebec for any part of a day.	5 00
Residents of any other city for each complete day of attendance at court	8 00
Residents of any other city for any part of a day	4 00
“ “ any other part of the Province for each complete day of attendance	5 00
Residents of any other part of the Province for any part of a day	2 50

For mileage when the distance travelled exceeds two miles, ten cents per mile each way.

For each day not exceeding three days, occupied in whole or in part in the study of any subject, question or matter ordered by the Judge, the Attorney-General or his representative and upon which professional evidence is subsequently to be given in court.

This tariff applies to all criminal trials.

If called by the defence, the doctor must take his chances of collecting from the defendant and usually they are very slim. As a rule however, he is called by the defence on matters of opinion and he can then protect himself by refusing to answer until his fee is paid.

(*f*) *Proof of Account of Services Rendered.*

It sometimes becomes necessary for the physician to sue for his fees. This action must be taken within five years from the last payment on account. Special exception is made in favour of the physician or surgeon enabling him by his own oath to make proof as to “the nature and duration of the services.” Under this law up to this year there has been some conflicting jurisprudence on the question as to whether the physician could also prove the fact of the services having been rendered. The practice has of late years been to permit him to do so. However, a statute of the last session of the Legislature (60 Vic. cap. 54) enabling all parties to make proof in their own behalf in ali cases, both disposes of this question and renders obsolete the special exception in favour of the medical profession.

CHAPTER II.

The Doctors' Duty in Relation to Acts of Status.

Questions may arise as to the duty of doctors respecting acts of birth and acts of burial.

(a) *Acts of Birth.*

In France the law charges certain persons, such as fathers, mothers and doctors, or midwives, or any other person who may have been present at the accouchement to declare the birth to the authorities.

In the Province of Quebec there is no such obligation upon any person save the father and mother.

(b) *Acts of Burial.*

It is different, however, respecting Acts of Burial. The provincial act concerning Compilation of Vital Statistics (56 Vic. cap. 29, sec. 3059e) provides that every physician who has been called upon to render professional services during the last sickness of any deceased person shall under his hand, certify to the death and cause of death of such person, giving the name and surname, age, sex, nature of profession or calling, date of death, duration of illness and cause of death. Such certificate must be required by the keepers of the registers of burial, for example the cemetery authorities, before proceeding to the burial or granting the burial permit."

Under this section, physicians should be careful to give such a certificate, only when they have been called to give their professional services during the *last illness* of the deceased person. Otherwise they may certify to facts on hearsay evidence, thereby causing themselves subsequent trouble and annoyance. Under the amendment to the City Charter however (59 Vic. cap. 50 sec. 17 b) it is provided that: "In all cases of death occurring in the city, a certificate be deposited in the health office, and that such certificate be made in the form and manner determined by the Board of Health and the Council. It would therefore appear that the medical man had to give two certificates of death in each instance. However, by Order-in-Council of the 29th September, 1896, doctors are relieved from the duty of giving a certificate to the Provincial Board of Health as required by 56 Victoria, but must conform to the City Regulations which are practically the same.

In this connection, Art. 69 of the Civil Code is of interest. It reads as follows: "When there is any sign or indication of death having been "caused by violence or when there are other circumstances which "give reason to suspect it, or the death happens in any prison, asylum "or place of forcible confinement, the burial cannot be proceeded with

" until it is authorised by the coroner or other officer whose duty it is " to inspect the body in such cases.

What is the duty of a doctor then, civilly speaking, when he finds himself face to face with any sign which indicates death by violence or when there are other circumstances which give reason to suspect it?

In the first place, what is violent death?

Worcester defines it to be that "produced by force or violence, not naturally." Taylor on Medical Jurisprudence (vol. 1, p. 166) enumerates the various causes of "violent death" as being "poisoning, wounds and personal injuries, such as burns and scalds, as well as those forms of death which commence by the lungs, including drowning, hanging strangulation and suffocation." In his discussion of these forms he includes the *medical operation*. (See also Lacassagne, Médicine Judiciare, p. 102). Hence all deaths resulting from either accidental or criminal acts and even from medical operations are violent deaths in the meaning of the law and the deceased cannot be interred until his interment is authorised by the coroner.

It should be clearly understood that there is no law placing upon medical men the obligation to notify the coroner in cases of violent death. It is therefore evident that a failure to notify him does not beget a civil liability.

The physician may give his certificate, which in all cases he should be careful is absolutely exact, and throw the onus of informing the coroner upon the authorities who, by law, are prohibited from permitting the burial. In practice, however, with this ultimate result in view, physicians will usually consider it more convenient both for themselves and the relatives of the patient to at once notify the coroner. If the violent death be traceable in some measure to medical treatment it is in the interest of the physician himself to place the matter clearly before the coroner and thus avoid future possible misunderstanding.

CHAPTER III.

CIVIL RESPONSIBILITY.

Under this general term arise the great majority of questions in connection with the relations between medical men and the outside world, in the course of their daily practice. The word "responsibility" practically means in general, under the French law, "the obligation to repair a damage." (Villargues' Dict. de Dr. Civ.)

(*a*) *The Doctors' Civil Responsibility for the Betrayal of the Professional Secret.*

The majority of the questions which arise under this head, do so in relation to the observation or breach of the professional secret. They are questions into which enter considerations of private interest, professional etiquette, public policy and the interests of society. So conflicting are the divers interests which must be considered, so varied are the circumstances under which the different questions arise, that it is exceedingly difficult to lay down a general principle for all cases. I propose, however, to discuss these questions one by one and shall attempt to solve as many of them as may be possible.

In France, the question is to a certain degree simplified by the existence of a section in the Penal Code of which the following is a free translation. (Art. 378, C. Penal). "Doctors, surgeons and other "health officers, as well as midwives, pharmacists and all other "persons, the receivers, either by status or profession. of secrets which "people confide to them, who, save in cases in which the law obliges "them to inform, shall have revealed secrets, shall be punished by an "imprisonment of one month to six months and to a fine of from 100 "francs to 500 francs." You will note the exception "save in cases which the law obliges them to inform."

This article of the Penal Code is only the legislative enactment of the old French law and jurisprudence on the subject. (Merlin Rep. vo. Médicine; id., vo. Chirurgie; id., vo. Apothècaire; Dareau, Traité des Injures, t. I., p. 87).

The betrayal of a professional secret is by the French considered to be a penal offence which according to their ideas, is midway between a civil and criminal offence. The Penal Code laying down this principle, the civil law applies it to civil cases. When by its infraction a medical man causes damages he is deemed to be in fault.

In the State of New York (Rev. Stat., 5th Ed. vol. 3, p. 690) "no "person duly authorized to practice physic or surgery is allowed to "disclose any information which he may have acquired in attending "any patient in a professional character, and which information was "necessary to enable him to prescribe for such patient as a physician, "or to do any act for him as a surgeon." According to this legislation the doctor is not to disclose his professional secret even in the witness box or in Criminal matters, unless there be exceptions in other statutes which I have been unable to find. Similar legislation exists in other States of the Union.

There is no such legislation in England or in the Province of Quebec.

The questions respecting professional secrets which arise in either country must be decided according to the common law in one instance and the principles of our code and of the old French law in the second.

It is curious to note that the sections respecting physicians and surgeons in the Revised Statutes make no mention of this important matter. This is a contrast to the sections respecting notaries, (R. S. Q. 3622) which require them to keep secret the confidences made to them professionally and (R. S. Q. 3608) which places them under the safeguard of the law in the performance of their professional duties. Apparently under the Revised Statutes, the Board of Governors of the College of Physicians and Surgeons has no power to make rules beyond those respecting studies, examinations, credentials, etc., registry of names and rules and regulations for the general management of the corporation.

Apart from the oath of Hippocrates, administered to him by his own profession, the doctor is under our law quite free to disclose his professional secret, save in so far as he may render himself liable in damages for his act.

I propose to show how this legal liability arises.

From the moment of the consultation a contract of hire exists. This contract is subject to the tacit condition that the information given to the doctor by the patient, which is necessary to enable him to prescribe for such patient or do any act for him as a surgeon, shall be kept in strict confidence. This condition ceases to exist under certain circumstances which I shall discuss later. It owes its existence to the fact that the members of the medical profession by the rules which govern them, hold themselves out to the world as confidential advisers. It has also the sanction of public opinion and policy, which in fact lend to it its main strength.

Under our law, the breach of a condition in a contract renders the one in fault liable in damages under the following article of the Code. (C. C. 1053). "Every person capable of discerning right from wrong " is responsible for the damage caused by his fault to another, whether " by positive act, imprudence, neglect or want of skill.

It will be noticed that the provisions of the law thus laid down are very broad and general in their terms. The doctor is responsible for damage caused by his fault, whether by imprudence, neglect or want of skill.

In view of the express legislation in France we must depend upon the general interpretation of the above article, with such assistance as the English law may afford.

In England the general principles of the common law may be found laid down in the famous case of Kittson vs. Playfair tried last year. Probably no case for many years has excited such interest among physicians throughout the world, on account of the prominent position of the doctor involved and the tremendous damages of $60,000 awarded. Doctor Playfair was no doubt placed in a trying position. He had discovered, as he believed in good faith, that a lady, a relative and connection of his by marriage, had been guilty of immoral conduct in the absence of her husband. He considered himself under the necessity of either breaking his professional oath or of permitting this woman to intimately associate with other members of his family. His desire to protect his wife and daughters was the stronger impulse as it would be with many other professional men, and I think justifiably so. It was quite possible for him and would be quite possible for any other medical man under the circumstances not only to have observed his professional oath, and at the same time protect his family life. All that was necessary for him to have said to his wife was, " I have reasons for desiring you to cease receiving this woman and desire that she no longer associate with my daughters," cautioning his wife to attain this end discreetly. Had he gone no further than this it is difficult to conceive how the law could have reached him in any way. He was, however, completely carried away by his personal feelings and went beyond the bounds of prudence and necessity. He first wrote to the unfortunate woman, informing her of his suspicions and threatening that, unless she at once left London, he would expose her and cause the withdrawal of her allowance by another branch of the family. He was obdurate to her pleading letters for a further hearing. He finally not only told his wife of his suspicions in detail, but wrote them to a relative who was granting this woman an allowance, advising him to withdraw it, which he did. I do not see how, under the circumstances, any court could fail to condemn not only a medical man, but any individual for such a series of acts. The fact that the information so utilised was obtained under the obligation of professional secrecy rendered the offence all the more glaring in appreciating the damages.

At the trial he pleaded privilege, but not the truth of his assertions, That question came up only incidentally.

As indicating the points at issue the following were the findings of the jury:

" That Dr. Playfair believed the words to be true, but did not give the plaintiff an opportunity of making an explanation ; that the words were not uttered in good faith and without malice ; and that the words were not uttered from a mere sense of duty, but from an indirect motive."

The general principles of the law on this question in France, England and here are practically the same, with the exception that the old French law in force in this Province and as expressed in the section 1053 of the Code, above quoted, is much more severe in its appreciation of facts giving rise to damages, than the English law.

Before discussing particular questions, I would lay down a general rule respecting professional secrecy.

The physician is at all times bound to observe the confidences of his patient on pain of a condemnation in damages, with the following exceptions :

1. When he has been expressly relieved of his obligation by his patient.

2. When he is ordered by the court to answer as a witness.

3. When the rules of the Board of Health demand it.

4. When it is necessary to free himself from the danger of being held to be an aider and abettor of a crime or an accessory after the fact.

5. When an ordinarily prudent man, may in good faith, without malice or exaggeration consider it to be his duty to society or to himself.

The first three exceptions require no further comment. The fourth will be explained by a discussion of the criminal aspect of the matter which I treat of later.

The exception under which the physician finds the greatest difficulty is the last, that is as to when he may consider it his duty to society or to himself to divulge his patient's secret and does so without liability in damages.

I do not enter into a discussion of the struggle between the physician and the man, which is bound to ensue. I only treat the question on the presumption that he is prepared to lay aside professional scruples. I presume that he has determined that it is his duty to speak, but hesitates for fear of possible damages.

Our courts would consider the truth of the doctor's assertions, his clear and over-riding moral duty, his good faith and absence of malice, and the fact that he only divulged the secret as a last resort. As the matter always resolves itself to a matter of "right to damages," the doctor, keeping the above considerations in mind, should be able to appreciate the risk he runs and whether the moral and social duty is sufficiently great to incur it.

You will recognise with me the impossibility of imagining every variety of circumstance and of going far beyond general principles, upon so difficult a question. I shall however, discuss one or two of the more important questions which may arise.

(1) *Before Marriage.*

Take for instance the case of a patient who has been treated by a doctor for some virulent desease and who is about to be married, notwithstanding his physician's protests. If the lady is unknown to the medical man the question is not likely to arise with the same force, as he will probably be less prompted to go out of his way to prevent the marriage. In fact he would have no opportunity of preventing it without a glaring breach of professional secret. If the lady, however, is within the immediate circle of his acquaintance there are numerous ways which may suggest themselves to him, by which he can bring about the same result without breaking confidence. Dr. Bruardel in his remarkably interesting treatise on "Le Secret Medical" gives an ingenious method. The father of the intended bride being a friend of his, he one day called his attention to the death of a young husband who left his wife entirely without means, and to the fact that had the young man held a policy of insurance, his wife would have been provided for. The consequence was that the father of the fiancée at once requested the intending bridegroom to take out a policy of insurance on his life and upon his inexplicable refusal, as it appeared to the father, the match was broken off. In neither of these cases do I think that the doctor would be justified in a breach of confidence.

It is presuming an extreme case, but within the range of possibility that the lady about to marry be a member of the physician's own family. In such a case I cannot conceive it possible that a court of justice would condemn a medical man for protecting his child to the fullest extent of his power even if it be necessary to disclose to her the true facts of the case as a last resort. The obligations and the duties of the parent rise transcendently above all considerations of professional duties, of etiquette or of public policy.

As the relationship or connection with the medical man lessened, I would consider him less justified in breaking professional confidences to prevent the marriage; and, when once he left the close relationship of father and daughter he would have to take his chances of the appreciation of the tribunal of the whole circumstances of the case.

(2) *During Marriage.*

Delicate legal questions also arise as to the duty of the doctor, when, after marriage, the consorts are individually his patients. It would seem that the professional secret should be observed in this instance as strictly as the circumstances of the case may require, but I do not think that owing to the intimate relations and confidences between husband and wife and the remote possibility of one or the other being able to claim damages, that the doctor has frequent cause for perplexity.

(3) *In Reference to Minors and Domestics*

The question of professional secret also occasionally arises in reference to minors and domestics.

In these cases the persons who demand information as to the illness from which the person is suffering and to whom the physician is inclined to give the information, are the parents and guardians in the one case and the master of the servant in the other.

There is no question that the duty of the doctor is in either case is to disclose the nature of the illness if it is a contagious nature. That comes within the exception as to the rules of the Board of Health. But if the disease be non-contagious and of a disreputable character. he should have considerable hesitancy in doing so.

The argument recited in books, which discuss the question, is that he who pays for the services of the physician rendered to another party, be he a minor or domestic, is entitled to full information. I do not think that such individuals are so entitled. For the information is obtained by the doctor from the patient, not because this third party has paid for the services, but solely in faith of the physician's professional obligation of secrecy and to enable him to perform his duties properly.

Of course, where there may be the difficult question between the obligation to preserve the confidence and at the same time respect the rights of the individual who has the welfare of the minor in charge, the physician must determine according to the circumstances of the case, and should be governed largely by what he considers to be the best interest of both parties. He should be careful that by his communication the minor does not suffer damage, of which in this class of cases there would be only a remote possibility.

It is more difficult, however, in the case of a domestic or servant. The physician should be extremely careful. If he is called in by the master to treat the servant whom he finds to be suffering from any ailment which she might under the circumstance object to be known by her master, her associates or the public, he cannot inform the person who employed him without rendering himself liable to an action in damages, unless there be a danger of contagion, which he is unable to at once remove by causing the removal of the servant.

(4.) In an Action for Professional Services Rendered.

The question is also discussed in the text-books as to whether the physician can sue for his fees, if by so doing he would have to divulge professional information of a damaging character to the defendant. It has been held in this Province that a doctor has not the right to publish in an account for professional services, the nature of the disease for which he claims the price of his services, when such publication is of a nature to injure his debtor (5 Q. L. R., p. 267).

I am not disposed to agree with some medical writers on this point who appear to be of the opinion that the doctor should forego his fees under such circumstances. There is certainly no necessity for him to do so under our system. He may take his action simply for professional services rendered. (Dareau, Traité des Injures, Tome I., p. 87). If the action be contested he need not give evidence beyond the facts that professional services were rendered on certain dates and for certain lengths of time and that they were of certain value. He may throw the onus upon the defendant himself to elicit, if he chooses, the nature of the services and thus bring the matter within one of the exceptions above noted. The fact that the defendant so demanded this information would free the doctor from the obligation of keeping it secret. The question is not likely to arise frequently, as a patient who wishes to conceal the disease will do all in his power to prevent the matter going to court. On the other hand, a physician will not sue an individual who is not able to pay.

(b.) The Doctor's Civil Responsibility for Negligence, Imprudence and Want of Skill.

The physician is responsible, as I have said, for his fault, negligence, imprudence or want of skill. The doctor who acts within the limits of his art with a conscientious opinion of the excellency of his system incurs no responsibility. The law determines the grades by which one acquires the title of doctor, but it submits the exercise of medical art to no control. He who has obtained degrees from a medical faculty is legally presumed to have the necessary capacity. Thus the practice of medicine from a scientific point of view can bring with it no responsibility. But when a grave fault or neglect can be imputed to the doctors, responsibility exists. The surgeon who performs an operatien in a state of intoxication is responsible for the consequences ; so, too, if he has not properly arranged the bandages ; so, too, if he commits a material and damaging or fatal error in his prescription or is guilty of other grave neglect or ignorance. A doctor would not be submitted to an action by the fact alone that he might have been deceived. He might, however, be responsible for giving an unaccustomed prescription, taking chances as to its efficacy The court would, however, have to carefully distinguish between carelessness or empirical audacity and the confidence of a savant or a man of genius. For it has been the experience in the past on many occasions that such men have been a generation in advance of their time. The courts would have to carefully consider the reasoning and grounds for belief upon which the physician based his treatment hitherto unknown or but slightly known to medical science. (Dalloz Vo. Responsabilité No. 128).

In accordance with this principle it has been decided in France that the obstetrician who without necessity amputated the two arms of a child in order to deliver the mother, can be held responsible in damages (id. No. 129).

It is to be noted that in order to legally perform a surgical operation the doctor should be authorised by the patient or by the person under whose authority he may be. The operation should never be performed without this authorisation, save in cases of urgency. But it is not necessary, nor is it customary, that the doctor should give the patient a thorough knowledge of the technical details of the operation. It is sufficient for him to simply term it a surgical operation for such and such a purpose. The burden of proof as to the consent of operation is upon the doctor. (Dalloz, J. G., 1891, Vo. Responsabilité-Médicine).

The doctor is under no obligation to answer every call, but having undertaken to attend any individual he is responsible for damages which may be caused by his subsequent unjustified refusal. It is not likely that such a question would arise (id. 131).

(c.) The Doctor's Civil Responsibility for Confidential Conversation.

The doctor may sometimes find himself embarrassed by the confidential question as to the standing of a fellow practitioner. It has been held "that a statement made by a person in the course of a private conversation with his family physician is privileged, particularly where there is no proof of malice (Sinn v. Marcus, 6 R.J.O.S.C. Tait, J., 1896)." It has been also held "that a doctor who expresses "in good faith, at a ball, to a friend who consults him in passing, his "opinion against a secret and new treatment adopted by a *confrère* for "the delivery of women without pain, and who cites a case in which "a woman had died after undergoing this treatment, referring at the "same time for details to a third doctor called to this delivery, cannot "be held for slander, because this conversation is privileged." It was "also held "that a letter on the subject of such conversation, written "by the defendant in reply to a letter from the plaintiff, which asked "him from whom he received this information, is also a private and "privileged confidence" (DeMartigny vs. Mount, 21 R. L. 461, Pagnuelo, 1891, S. C.)

The principle followed was that slander in order to be punishable should be public. (Nouveau Denizart, Vo. Diffamation, par. 2, No. 1). Thus what two people in conversation tell each other they think of a third party would not render them liable for slander, as a result of natural liberty which all men possess of communicating their thoughts to those whom they deem worthy of it, save always professional confidence. (See also in the same sense Tellier J., S. v. D., 18 R. L. 132.) A decision which appears contradictory to this general line of jurisprudence is as follows (DeCow v. Lyons, R. J. Q. 4, S. C. 341): A druggist on being asked by a customer as to the professional position of the plaintiff, a doctor, replied that he had heard that he had tapped a woman for dropsy, when as a matter of fact she was pregnant. The Superior Court held that this conversation was privileged, but this decision was reversed in Review on the ground that it did not come within the duty of the druggist to give such information to his customer, and that the information was not only untrue, but he was officious in giving it. He had never verified its truth, nor even attempted to do so.

Ephemerides, 1896.

By William Osler, M.D.

XVIII.—Two Cases of General Bromidrosis.

General bromidrosis, particularly of the aggravated form as in one of the cases I here report, is a truly terrible affection. As a local disorder it is not uncommon, particularly of the feet, but the variety in which the function of the entire skin is disturbed is rare, and usually very intractable.

Case 1.—A. B. aged 36, resident of British Columbia, consulted me August, 1893, complaining of offensive sweating of all parts of the body, and perceptible to persons in his vicinity. He has always been a very healthy man; has never had rheumatism. Nine years ago he had a doubtful sore on the penis, not followed by secondaries. He has always been fond of physical exercise, and has sweated a great deal. He has never suffered with offensive sweating of the feet or of the armpits.

The present trouble began a year and a half ago. His attention was first called to the odour of a pair of trousers which he had worn the day before. He then appreciated that there was a very definite odour from the skin; it was not worse in the arm-pits or in the groins, but general and very noticeable in the undershirt when removed at night. Last summer he had to stop playing cricket on account of it. The underclothing is never stained, and he does not think there has been anywhere an excess of sweating. The hands are sometimes moist but have no beads of perspiration. Naturally the condition has troubled him very much as it is at times noticeable to the persons in the room in which he works, and any ordinary sized room in which he remains for a few hours smells of it quite distinctly. He describes the odour as not the exaggerated odour of the sweat in the arm-pits, but rather a stale musty smell, not unlike the odour of the parings of the frog of a horse's foot. His general health is not impaired. The urine is sometimes high-coloured and he states that at times it has had an odour similar to that of the body. On his way from British Columbia he stopped for a couple of weeks at the Banff mineral springs, and there, under a line of treatment suggested by Dr. Brett, he improved very much.

Present Condition.—The patient is a strong, robust looking man. The skin is everywhere natural looking; not moist. There are no changes whatever to be noticed. On removing the underclothing there is a very definite, musty odour which clings to the garment for some time. The same smell is perceptible in the palms of the hands and on the surface of the chest and back. It is not at all like the smell of ordinary axillary sweat, but reminds one very much, as the patient says of the parings of a horse's hoof or of corn. The skin was nowhere particularly greasy; there was no specially offensive odour about the feet.

The urine, of which I saw two samples, was clear, highly acid; the morning sample had an odour somewhat resembling that of the body.

The reaction of the sweat could not be tested, as when I saw him there was no visible perspiration. The strong alkaline treatment on which Dr. Brett had placed him seemed to have been of such striking benefit that I urged the continuance of it, and a fortnight later I heard from him that the improvement continued. In case this did not succeed I advised the persistent use of pilocarpine.

I heard from this gentleman on the 14th of December. He states that he kept on the alkaline treatment, and after October 1st, the offensive odour entirely disappeared. I heard subsequently that this patient has remained quite well.

Case 2.—Mrs. X., aged 36, consulted me September 22nd, 1893, complaining of an intensely disagreeable odour of the sweat. When she came to make the appointment she handed a piece of dark alpaca which she had the day before worn about the upper part of her chest. It was thickly covered with a whitish gray material which microscopically presented fat droplets and epithelial scales.

The patient, a very healthy women, has been married 13 years and has three children. She states that as long ago as ten years her husband had noticed that the odour of the perspiration in her stockings was particular offensive, and would hang them outside the room. She herself had not noticed it and it gradually improved. Two years ago, after a severe shock in consequence of the sudden death in her presence of a friend she began to have very profuse sweating about the head and body. She states that on the head the colour of the perspiration was quite greenish, a statement corroborated by a friend who came with her. The odour is particularly marked now about the axilla and the trunk. The perspiration of the feet is no longer fœtid. Every day over the upper part of the chest and around the neck and down the back there forms a floury sediment which she says is at first greasy, but when the clothes are taken off it dries like a crust of sugar, and on her skin it looks sometimes as if there was flour. She perspires a good deal at night and her night gown smells very badly in the morning. During the day it is not quite so noticeable if she keeps quiet, but if she is up and about and on her feet a good part of the day it becomes very perceptible. She has been nervous at times and the trouble has affected her very much.

Patient is a robust, healthy looking woman. The odour of the room in which she sits is very noticeable ; of a musty, stale character, not recognisable as a very strong axillary odour. She compares it herself to some forms of cheese, and she says that at times the sweat from the back is as offensive as the worst Swiss cheese. The hands are perspiring and the musty odour is perceptible. The odour is very strong on the upper part of the neck and back, and in the arm-pits. The skin is moist, not particularly greasy. There was no floury powder at the time of the examination, but she says that the lining of the dress which she had just taken off would, when exposed for an hour or so until it dried, be quite white with this material, and sometimes the hair in the axilla is quite frosted with it. The peculiar odour is most noticeable in the upper part of the body. It is scarcely perceptible on the legs.

Oct. 6th. Patient returns to-day, after having tried local applications of carbolic and salicylic acids and scrupulous cleanliness. The odour is worse and is apparent at once when she enters the room. It is very pungent and strong. She states that it is now present over the whole body. The thick, floury exudate is still confined to the upper part of the chest and neck, and is present in a thick layer on the clothes which she wears next to the skin. She was ordered a hypodermic of pilocarpine, an eight to a sixth every other day, and the fluid extract of jaborandi, eight or ten mimims on the intervening days.

A few days subsequent to her visit, I got into a street car and instantly recognized by the odour that this poor woman was in it, although she was sitting at the far end.

Dr. Abel made an analysis of some of the seborrhœal material, and I add here notes and extracts from his letter.

"The material for analysis consisted of small white scales and crumbling material which I rubbed off from some pieces of alpaca cloth which has been put around the neck to protect the collar of the dress. This material had a very disagreeable odour. Analysis showed the presence of proteids, fats, organic and inorganic salts. Failing to detect anything in the nature of a neutral compound (ethylsulphide, for example) which would account for the odour, I made an extract of the material with alcohol and ether, expelled the alcohol and ether, and subjected the residue to distillation with a current of steam, first rendering acid with dilute sulphuric acid. The distillate thus secured was milky in appearance and of an acid reaction. On standing, oily droplets formed on the surface. This distillate had an odour which was indistinguishable from that of the original material. Judging by the odour, I concluded that the acid droplets above referred to consisted of fatty acids, as caprylic, caprinic, capronic acid, etc. When a drop of each of the three acids just named was thrown into a little water and the whole shaken, the odour of this mixture was like that of the distillate.

I concluded that there must be several of these evil smelling acids present, as the odour was more marked than that given by capronic acid alone. You will observe that the above statements are based solely on the odour of the oily droplets floating in the distillate. It was impossible to make an analysis of these droplets, separating out the various acids, the material being insufficient in amount for this purpose."

A few months later I heard that this poor woman had died suddenly under circumstances strongly suggestive of suicide. I was not surprised as she was in a state of hopeless despair, having tried all remedies in vain.

RETROSPECT
OF
CURRENT LITERATURE.

Medicine.

UNDER THE CHARGE OF JAMES STEWART.

A New Preparation of Tuberculin.

ROBERT KOCH. "Ueber neue Tuberkulinpræparate."—*Deutsche Medicinische Wochenschrift*, April 1st, 1897.

Since Koch first published his observations on tuberculin, he has continued working, striving to make improvements and to secure a better product than that first used by him in the diagnosis and treatment of tuberculosis.

The subject of the use of tuberculin is wrapped up with that of immunity, and immunising agents are (were) sometimes those working against the toxic products of bacteria, at other times against the bacteria themselves. The ideal agent is that which protects the body against both.

Under certain conditions there appears to be a degree of immunity induced against tuberculosis in the course of its progress in the body, but efforts to induce this by the use of tubercle bacilli, either living or dead have failed in Prof. Koch's experiments. In such a state they are not readily absorbed. This was his first step. His second step was taken with the view of rendering these micro-organisms absorbable. This was done by means of dilute mineral acids or strong alkalies. However, though readily absorbed, the immunising quality of the bacilli in the preparation was destroyed.

In the use of glycerine extract of tubercle bacilli for diagnostic purposes no bad effects were seen. The bacilli already in the body were not rendered mobile to invade other parts, and after each tuberculin reaction an improvement appeared. Finally there came a brief period when the animal was immune against tuberculin. This immunity however was toxic and not bacterial.

What was wanted plainly, was a preparation acting against both toxins and bacilli.

Such a preparation Dr. Koch believes he has now produced by subjecting dry cultures of tubercle bacilli to the mortar and pestle, and after mixing with distilled water the mixture is centrifugated. The upper clear fluid is taken off while the process of drying, pulverising and centrifugating is repeated many times until the whole mass of the original culture is changed into a clear fluid. It is noticed, that the first product in this process differs from those subsequently obtained in having properties the same as the original tuberculin, and the same as the alkaline extract of the bacilli. While the other products of the process *i. e.*, the fluid obtained in subsequent drying, trituration and centrifugation, has immunising effects and works, it is believed, against the tubercle bacilli.

In administering this fluid, Dr. Koch aims at producing as little reaction as possible and he increases the doses as rapidly as possible, until an immunity against this fluid is induced, and he states that when this is secured he believes immunity against the bacilli of tuberculosis is also secured. An animal so treated does not react to ordinary tuberculin. Such a belief is established upon the uniformity of many observations.

With details in the preparation, this resumé is not concerned, but a few points on the mode of administration may be of interest

The fluid is preserved in 20 per cent. of glycerine. It is administered by a hypodermic needle in the same manner as tuberculin. It is recommended to begin with $\frac{1}{500}$ m. g. The original solution (1 c. c., holding 10 m. g., of solid substance) may be diluted with a normal solution of salt. The maximum dose is 1 m.g. If the temperature rises one half degree the dose must be lessened If not, increase may be made slowly. The temperature must disappear entirely before a second injection is given, and every second day is quite as often as the doses may be given. Experiments on animals and man have been made both in immunising and treatment, and favourable results are reported. The cases in which good results may be expected are those in the early stages without secondary infection and where the temperature does not go beyond 38° C. Prof. Koch reports improvement in many cases of lupus under this treatment.

What is needed now is a faithful application of this preparation by numerous careful observers.

Cardiac Changes Under the Schott Treatment Demonstrated by X-Rays.

TH. SCHOTT. "Ueber Veränderungen am Herzen durch Bad und Gymnastik Nachgewiesen durch Röntgenstrahl."—*Deutsche Medicinische Wochenschrift*, April 1st, 1897.

Among the questions of sceptical observers of reports on the Schott method of treatment in cardiac disease are those concerning the variability of heart measurements; whether or not percussion was reliable, and whether, what is indeed of more importance, the lung was not the organ whose margin changed, while the heart was thus *apparently* diminished in size, as a result of the bath or of gymnastic exercise.

Both Brothers, Schott, taught that the heart was the organ changed, and recently Th. Schott has, by the application of the Roentgen rays, demonstrated the truth of this teaching.

To establish such changes by such means requires every precaution which Dr. Schott doubtless has taken, the choice of subjects, children, the arrangement of distances, and the accurate location of the nipples by means of leaden caps, which in the skiagraph comes prominently out.

He reports his results in two cases, and presents photographs in each case. One case shows the changes due to gymnastics, the other, those due to the bath. In the former the photographs are very clear, though definite changes are shown in measurements. The resulting diminution in horizontal measurement due to gymnastics is greater than that due to the bath, yet a comparison is scarcely allowable since the observations are so few and the variations of individuals must be considered.

A series of such observations is needed to settle the question concerning this physical sign.

W. F. Hamilton.

Surgery.

UNDER THE CHARGE OF GEORGE E. ARMSTRONG.

Appendicitis: Remarks and Cases.

MORRISON. "Appendicitis: remarks and cases."—*The Edinburgh Medical Journal,* March, 1897.

Mr. Morrison adopts a clinical classification:

I. Appendicitis with a localised and dry form of peritonitis.

II. Appendicitis with a localised collection of pus or inflammatory products. The fluid in these cases may be localised by adhesions or by the retrocæcal position of the appendix, and the condition may be acute or chronic.

III. Appendicitis with perforation into the general peritoneal cavity, and diffuse peritonitis.

The position of the appendix is of moment in the prognosis of cases of appendicitis, probably of more importance than has generally been admitted.

An appendix may lie between the cæcum and ascending colon on the inside and the parietal peritoneum on the outside, or it may lie behind the cæcum and ascending colon. In case of perforation in either of these situations, the escape of the contents would be into a fairly localised space, and the rapidity with which adhesions form tends to localise still further the subsequent infection.

All observers seem agreed that the normal position of the appendix is on the inner side of the cæcum, pointing towards the spleen. Any leakage from an appendix in this position would almost certainly set up a general septic peritonitis, and its removal from this situation would be attended by greater risk of infection of the general peritoneal cavity than would be its removal from the first or second positions. Again, it may hang over the brim of the pelvis and there set up pelvic peritonits. This would be more likely to be attended by increased difficulty of diagnosis in women then in men.

Mr. Morrison confirms the description given by Lockwood of a subcæcal pouch, and says that he has dissected the appendix out of the cellular tissue lying between the layers of the ascending mesocolon in at least three bodies in the post-mortem room, where no previous inflammatory attacks had obliterated the landmarks. This anatomical position may account for the symptoms indicating involvement of the psoas muscle which are occasionally observed.

Mr. Morrison claims that the teaching that the appendix is solely supplied by a single artery, a branch from the ileo-colic, is erroneous, and that this can be demonstrated by ligaturing the meso-appendix and cutting through the appendix before tieing its base. A fairly active circulation will be found going on.

The lymphatic supply, when infected, generally explains those cases of appendicitis in which no perforation of the appendix is to be found. The most common form of peritonitis from lymphatic contamination is plastic, seldom diffuse. A diffuse peritonitis or an abscess are usually the result of a gross lesion.

In discussing the etiology of appendicitis, mention is made of the similarity in structure between the mucous membrane of the appendix and the tonsil, of the frequency of appendictitis immediately following a severe strain, and of its frequent onset during sleep. The carbonic acid in the tissues is increased during sleep, and carbonic acid is a stimulant to intestinal movements. It seems probable that the colon is physiological active during sleep, for the majority of persons, soon after getting out of bed, have to relieve themselves of its effete products, and this activity with a damaged appendix may be the explanation of the sudden rupture during sleep.

Two cases are referred to in which, during the operation, undertaken for conditions diagnosed as appendicitis, a small perforation of the cæcum was found from a quarter to a half inch from the base of the appendix, which was not ruptured. No explanation of the pathology of such cases is given.

Geo. E. Armstrong,

Pharmacology and Therapeutics.

UNDER THE CHARGE OF A. D. BLACKADER.

On Anæsthesia and its Dangers.

HILL, LEONARD. "The causation of chloroform syncope."—*British Medical Journal*, April 17, 1897.

HARE, H. A. "Some important facts about chloroform."—*Therapeutic Gazette*, February 15, 1897.

WOOD, H. C. and CARTER, W. G. "A research upon anæsthesia."—*The Journal of Experimental Medicine*, March, 1897.

CAMPBELL, G. GORDON. "Ether anæsthesia ; clinical notes on three hundred cases."—*The Annals of Surgery*, December, 1894.

MARSHALL, C. T. "Deaths under anæsthetics."—*British Medical Journal*, November 17, 1894.

MIKULICZ, J. "Chloroform oder Aether,"—*Berliner Klinische Wochenschrift*, No. 51, 1894.

TREVES, FREDERICK. "Anæsthetics in operative surgery."—*The Practitioner*, October, 1896.

GURLT, PROF. "Some statistics of narcotisation."—*Annals of Surgery*, February, 1896.

The state of general anæsthesia is always one of more or less danger, and demands from the physician administering the anæsthetic not only the most watchful care during its exhibition, but a conscientious endeavour to acquaint himself beforehand with all possible sources of danger, and with the best means of recognising and avoiding or of combating them.

That the dangers associated with the administration of chloroform greatly exceed those incurred by the administration of ether is now conceded by almost every operator. The statistics of the administration of anæsthetics in Berlin for five years, as given by Prof. Gurlt, show that one death occurred in about every 3,000 cases in which chloroform was administered ; one death in every 6,000 in which ether was used ; one death in every 10,000 in which ether and chloroform were given, and one death in every 6,000 in which Billroth's mixture was employed. These statistics probably place the death rate in ordinary chloroform anæsthesia too low; one death in every 2,000 administrations is perhaps a more correct average.

The source of danger in chloroform anæsthesia still continues to be a subject of much discussion.

In an able address delivered before the Society of Anæsthetists in London, Leonard Hill terms the doctrine that chloroform kills by paralysing the respiratory centre, one of the most pernicious and dangerous ever put before the medical profession; a doctrine that is upheld only by a series of experiments, many of which were so careless in execution that they could not for one moment be accepted by a trained physiologist. The fact that chloroform produces a fall of arterial pressure is, he says, determined beyond all criticism. He denies the conclusion arrived at by the Hyderabad Commission regarding the cause for this fall, and quotes the results obtained by MacWilliam. This experimentor opened the thorax while the animal was under chloroform, established artificial respiration, and directly observed and recorded the effect induced on the heart muscle by the chloroform. Evidence of dilatation was obtained when chloroform was given in the ordinary amount required to produce anæsthesia, and at a time when the arterial pressure had not fallen to any marked extent. When the dilatation became extreme, the heart failed in its functions as a central organ of the circulation. Though it continued to rhythmically contract, its action was feeble and entirely ineffective, and its cavities remained engorged with blood. Since the dilatation is not sudden in origin, and the organ in spite of its functional inefficiency beats rhythmically, it is clear that the method employed by the Hyderabad Commission of observing the movements of the heart by passing needles through the thorax into the cardiac muscle may lead to deceptive conclusions. The heart may continue to contract and to agitate the needles while its power of maintaining the circulation has completely vanished. According to MacWilliam the fall of arterial pressure is, in its earlier stages, due mainly to the depressing effect of the anæsthetic on the vasomotor centre. The stage of depression is often preceded by a period of slight stimulation. The later stages are associated with failure of the heart as well as of the vasomotor centre. In several animals MacWilliam observed sudden failure of the heart during the primary anæsthetisation, while the respiration continued unaffected. On rapidly opening the thorax of these animals he found the heart to be in a state of paralytic dilatation. In some cases he managed to revive the circulation by rhythmically compressing the heart, but in others he was not successful as the heart muscle remained paralysed. Dr. Hill also quotes the ingenious experiments of Gaskell and Shore, and the results obtained from them, but adds that his experiments directly refuted their statement that the vasomotor centre is not paralysed, but rather stimulated by chloroform. Dr. Hill then described several experiments carried out by himself to determine the influence of gravity on the circulation and shows how powerful this force is when the vaso-motor tone of the splanchnic area is destroyed.

An experiment is described in which the splanchnic vasomotor tone was abolished by dividing the spinal cord at the level of the first dorsal vertebra. On dropping the animal into the feet-down posture, the arterial pressure fell from 80 mm. Hg. at once to zero. By violent diaphragmatic respirations the arterial pressure was raised to 6 mm. The respiratory centre, however, soon became paralysed, and the circulation ceased. The empty heart continued to beat vainly, and on returning the animal two minutes later to the horizontal position, the heart was filled, the circulation renewed and the arterial tension raised to its former level. This manœuvre is one which may be repeated several times. If the thorax be opened, the heart can be seen to fill or empty as the animal is turned into the horizontal or feet-down position.

Dr. Hill then says: "I know of no agent which can abolish the compensatory mechanism for gravity as can chloroform. Under morphine narcosis, the hydrostatic effect of gravity may produce a fall of 10 mm. Hg., while under chloroform anæsthetisation the fall may be as great as 75 mm. Hg. In a dog in the horizontal position during morphine narcosis the pressure equalled 186 mm. Hg., and in the feet-down position it fell to 174 mm. On then pushing chloroform the pressure fell rapidly to 30 mm. Hg. At this point the respiration ceased. On returning the animal to the horizontal position, the pressure rose to 56 mm. Hg., and respiration at once re-commenced. Compression of the abdomen will also cause an immediate rise in arterial pressure."

These experiments (and others not quoted) show that the paralysis of the respiratory centre depends not only on the chloroform which is circulating through and poisoning the centre, but also on the great lowering of the blood pressure. Dr. Hill says: "I do not wish to deny for one minute that chloroform damages the respiratory centre and weakens the respirations, but the point I insist on is that the respirations would not cease at the moment when they do cease, were not the centre damaged by the concomitant fall of arterial tension. The contrast between the effects of ether and chloroform on the compensatory mechanism for the hydrostatic effect of gravity is most marked. If the subject be in the horizontal position, and the chloroform be pushed, a rapid fall of arterial tension will follow, and if in the feet-down position, the fall becomes precipitous. In the feet-down position the fall becomes indeed so precipitous, that the curve rapidly approaches the zero line, and the respiration then ceases. On the other hand, on pushing ether, the fall of tension is far more gradual, and in dropping the animal into the feet-down position, the tension does not fall to anything like the extent that it would do under chloroform. . . . . . On turning the animal into a horizontal position, or on compressing the abdomen the contrast between the result of the two drugs is very striking. In the case of ether the heart is undamaged and the arterial tension is restored to normal by either means. In the case of chloroform the heart is damaged, and the pressure is not only not restored to normal, but in some cases on the application of compression it falls to zero owing to paralytic dilatation of the heart."

Dr. Hill also thinks that this action of chloroform in lowering arterial pressure may be much intensified by any condition of shock, a condition in which he thinks vasomotor paralysis plays a prominent part. He says: "In applying the conclusions drawn from their experiments and extended to man, the commission neglected the state of emotional fear, which in human beings frequently precedes anæsthetisation, and which may, by temporarily establishing vasomotor paralysis, produce syncope. During emotional fear, if the patient be in the erect posture, the face will blanch, the heart empty, and the blood pass into the abdomen. If the horizontal position be now taken, and the abdomen compressed, the circulation is renewed and syncope abolished. The vasomotor mechanism is, owing to the state of fear, partly inhibited, and on inhalation of chloroform, this partial paralysis may pass into total paralysis; the anæmic heart may suddenly pass into a condition of paralytic dilatation, and the anæmic respiratory centre cease to act.

Prof. H. A. Hare, in a paper read a few months ago before the College of Physicians, of Philadelphia, says that the truth in the question as to whether chloroform causes death by respiratory failure or cardiac failure, appears to lie between the two; in the majority of cases the primary cause of death is vasomotor depression, whereby the arterioles allow the blood to pass freely into the great blood vessel areas which are found in the capillaries and veins, and, as a result, the patient is suddenly bled into his own vessels as effectually as if into a bowl. When it is remembered that the capillary network of the body will, with the relaxed veins, hold many times the normal amount of blood; that the liver itself is able to contain all the blood in the body, and that we can inject salt solutions into the vessels to the extent of several times the normal quantity of blood without raising the blood pressure, it at once becomes evident how the complete vascular relaxation caused by chloroform induces failure of all the vital functions, not because the drug has paralysed the heart or respiratory centre, but because these parts are deprived of blood by its stagnation in the widely dilated capillaries and abdominal veins. In confirmation of this view Hare quotes the results obtained in the many investigations carried on in all parts of the world, all of which attest the fact that chloroform anæsthesia is attended by a very distinct fall in the blood pressure.

Profs. Wood and Carter, on the other hand, after many experiments, reach the conclusions that lowered arterial pressure has a comparatively feeble effect upon the respiration ; that only when the pressure falls very low does respiratory depression occur; and that the chief factor in the production of respiratory failure during chloroform anæsthesia is the direct influence exercised by the drug upon the respiratory centres.

Perhaps more interesting, because more practical, is the question, What measures may be employed in general practice to reduce this unfortunate death toll demanded by the anæsthetic state ?

Dr. C. F. Marshall (late anæsthetist to the Great Ormond Street Hospital for Sick Children, London), asks if chloroform is ever necessary and, if not necessary, whether it is justifiable to give it ? He maintains that it is never necessary to use pure chloroform as an anæsthetic ; when used it should be mixed with ether. In his experience the most satisfactory combination is a mixture of equal parts of chloroform and ether which may be given with the same ease as chloroform. He maintains that the ether acts as a stimulus, counteracting the depressing effects of chloroform on the heart. His contention appears to be borne out by the statistics quoted by Gurlt which we have referred to. The above mixture of ether and chloroform (the quantities taken by weight, not by measure) I have myself employed for many years for producing anæsthesia in children, and in my opinion it has many advantages over the employment of either drug alone.

A recent American writer holds that, in view of the public opinion regarding the relative safety of ether as compared with chloroform, it is inadvisable for the surgeon to give chloroform except for very definite and well considered reasons ; otherwise if an accident occur, he may be severely censured. Ether, he says, generally gives warning of danger, it kills slowly ; and prompt treatment usually removes the threatening symptoms. Chloroform, on the other hand, kills quickly, frequently giving no warning symptoms, and treatment has generally proved of no avail. Judging by all published statistics, ether is unquestionably, for most cases, the safest general anaesthetic; chloroform is more than twice as dangerous. Hence the burden of proof in justification of the use of chloroform must rest with the operator.

While we fully agree with this statement of the action of the two drugs, there is much truth in Mr. Treves' remarks when he says, "In the matter of anaesthetics, it may be said in general terms that more depends upon the particular anaesthetist than upon the particular anaesthetic. Experience shows that he who is to successfully meet the many requirements of anæsthesia in surgery must have had considerable opportunities, must be possessed of powers of patient observation, and must exercise a tact and judgment which are acute, subtile and sensitive. The anæsthetist is made, not born. There is a fairly widespread impression that to give chloroform is a minor act: that the power, if it be worthy of that name, comes to a man with the granting of his diploma, and I have known the insignificance of the procedure emphasized by the remark: Well, if a medical man cannot give chloroform what can he do? He certainly cannot "do" it without training and experience."

What Mr. Treves says about chloroform is to a great extent also true of ether. All the difficulties and dangers connected with the anæsthetic state are by no means confined to anæsthesia by chloroform. *En passant*, we would strongly urge upon medical colleges the necessity of instilling into every student, not only a theoretical knowledge of the action of these two powerful drugs, but a practical acquaintance with the details of their administration, and the conditions which should influence us in the choice of the most suitable agent for each individual case.

In reference to this vaunted superiority of ether, Prof. J. Mikulicz, of Breslau, is by no means convinced that it is proved; nevertheless in the light of Gurlt's statistics he considers that every surgeon who uses chloroform should be able to justify his action. During the winter of 1893-4 he employed ether 80 times, selecting his cases and excluding old people, young children, and persons with pulmonary trouble, weak heart, or anæmia. Out of this number threatening symptoms made their appearance in 11 instances. Asphyxia occurred in 3 cases during the narcosis; collapse followed its administration in 2 cases; whilst in 6 additional cases, bronchitis or pneumonia appeared as a result of the anæsthesia. Mikulicz insists that, with such a record, as much care and skill are required in the administration of ether as in that of chloroform. Such an experience with ether is certainly very rare with us in America. In only two instances in private practice have I met with a broncho-pneumonia following the employment of ether. In both the anæsthetic had been administered in a dentist's chair, and the patient had shortly after driven home. The weather at the time was inclement.

In connection with Mikulicz's experience, however, we would call attention to the suggestion of Mr. Lucas, of Guy's Hospital, that the apparatus used by anæsthetists may be responsible for many of the cases of pneumonia following the administration of ether, as it is conveyed from one patient's mouth to another without efficient antiseptic precautions. The same thought was mooted by Dr. James Bell in our Montreal Medico-Chirurgical Society two years ago, and to avoid possibility of contagion he has adopted an inhaler which can be rendered practically aseptic for every patient.

A recent addition to our knowledge on the subject of anæsthetics is contained in the paper by Prof. Wood and Dr. Carter, previously referred to. Their researches show that the circulation recovers itself more slowly after profound etherisation than after a similarly profound chloroform narcosis, and that it is possible for ether as well as chloroform to produce death (quite apart from shock or loss of blood) some hours after the cessation of its administration, at a time when the cerebrum has freed itself from distinct evidences of the narcotic.

Apart from the question of the anæsthetic employed, are there any measures to be adopted which may reduce the danger connected with anæsthesia to a minimum? Unquestionably there are. The well known and important precautions of having no constricting bands around the neck, of having no interference in the slightest degree with the free play of the diaphragm and the abdominal wall, and of having the stomach free from food, which might find its way into the trachea, are imperative. It is important that the pathway for the entrance and exit of air shall be kept as pervious as possible. Any obstructions arising from mucus, blood, or ejecta must be removed promptly. While a low pillow may be allowed at the commencement of the anæsthetic it should at an early stage be removed. The consequent slight extension of the head favours the easy passage to and fro of the air in respiration. Should any difficulty arise the head may be still further extended and at the same time slightly thrown forward, a position which, according to Hare, raises both tongue and epiglottis, whereas the complete extension of the head backward and downward, advocated by Howard, can have only the effect of strapping the soft palate over the dorsum of the tongue, thereby cutting off the entrance of air through the mouth. Pressure forward and upward may at the same time be made upon the cornua of the hyoid bone, as generally recommended, and traction may be made upon the tongue.

The inhaler when chloroform is used should only be applied when the respiration is quiet. If the respirations are of irregular depth or should struggling ensue, the inhaler should be removed.

We must here emphasize the great danger incurred in administering pure chloroform in the dentist's chair, where the posture, half recumbent during the administration, is generally converted into a sitting one at the time of the operation.

Personally I am strongly in favour of the administration by the mouth of an efficient dose of strychnia $\frac{1}{20}$ gr., shortly before the induction of anaesthesia by either ether or chloroform. Such a dose must have a distinctly stimulating action upon the three important centres threatened by the anaesthetic, the respiratory, the cardiac and the vasomotor. Its action upon the heart muscle is also that of an excitant. On this subject Prof. Wood writes as follows: "Of all the experimental results which I reached those with strychnine were to me the most surprising. I found that the injection of strychnine into the jugular vein of a dog whose circulation and respiration were failing from an overdose of chloroform, was usually followed by a gradual rise of the arterial pressure, and always by an immediate and extraordinary increase of the rate and depth of the respiration." Digitalis is another drug of much service in combating the depressing influence of the anæsthetic on the heart muscle. In all cases where any symptom of a weak heart action exists, the previous hypodermic injection of a full dose of digitalis xx—♏ xl) before the administration of chloroform will greatly lessen the danger of cardiac collapse. In the Montreal General Hospital, a solution of camphor in olive oil (1 to 10) is, in addition to full doses of strychnine, employed immediately in threatened heart or respiratory failure during anæthesia by either ether or chloroform.

Among the more recent measures advocated to effect resuscitation in sudden heart failure we would call especial attention to two.

The first is the Laborde method of rhythmical traction on the tongue which both laboratory experiments and clinical observations prove to be one of our most simple and efficient methods of resuscitating even the apparently dead. It may, if thought best, be combined or supplemented by artificial respiration performed after Sylvester's method.

The second is Maas's modification of König's method. In König's method the operator stands upon the patient's left side, facing him, and lays the open hand upon the patient's chest with the ball of the thumb between the apex beat of the heart and the edge of the sternum, and presses in the chest wall quickly and strongly thirty times to the minute. Maas advises the manœuvre to be done much more rapidly (120 times a minute) and states that it has been used with much success in the Göttingin Clinic.

In his address, from which we have already quoted at length, Dr. Hill, referring to the treatment of chloroform syncope, says as follows: "If it happened that we simply had to deal with failure of the respiration, artificial respiration would remove the danger. If simple vasomotor paralysis occur concomitantly with failure of respiration, as is always the case, artificial respiration, combined with elevation of the abdomen to a level above that of the heart, would immediately restore the patient to safety. It is when the clinician has to deal with paralytic dilatation of the heart that the gravest danger has to be feared. As it is impossible to diagnose whether this condition may exist or not, every case of chloroform syncope should be treated as if it did exist. Recovery can be brought about practically in almost all cases by following this simple procedure. At the moment syncope occurs the patient must be placed in the horizontal position, and artificial respiration applied. The chest must be rhythmically compressed by placing the hands on each side of the thorax, so that the heart may share in the compression, and the circulation through that organ may, by artificial means, be maintained to a certain extent. If this is not quickly successful in restoring the pulse and natural breathing, the patient should be turned into the vertical feet-down position. By this means the dilated heart is emptied into the abdominal veins. After a few seconds the patient should be returned to the horizontal position, and the right heart will thus be refilled with a fresh supply. Artificial respiration should be maintained continuously. If this manœuvre does not prove successful at the first attempt it must be repeated. Its success will depend on the promptness with which the condition of syncope is recognized. Nelaton's inversion or feet-up position is only a safe measure in cases of syncope arising from vasomotor paralysis. In cases of cardiac failure either inversion or compression of the abdomen is a fatal mistake."

In conclusion we would emphasize the words of Dudley Buxton, of University College Hospital, London. "The action of the anæsthetic should be restricted within those clearly defined limits which involve only the higher ganglionic centres, and under no circumstances should incomplete anæsthesia be deemed sufficient for even the most trivial operation."

A. D Blackader.

Ophthalmology.

UNDER THE CHARGE OF J. W. STIRLING

The Eye in Hereditary Ataxia.

CHARLES W. BURR. "The eye in hereditary ataxia, with a report of four cases of Friedrich's ataxia in one family."—*Annals of Ophthalmology*, January, 1897.

This is an interesting and very full report of four cases of Friedrich's ataxia. The diagnosis was based on : The affection of four members of one family, the ataxia, the absence of knee jerk, the characteristic speech, the entire absence of sensory symptoms and the presence of nystagmus.

One curious symptom was the presence of marked chin jerk.

The diagnosis in ataxic children is, as Dr. Burr points out, greatly facilitated by the examination of the eyes. By it one is aided in deciding whether any given case of juvenile ataxia, is Friedrich's ataxia, or the family form of cerebellar ataxia, or the very rare locomotor ataxia beginning in early life, or cerebellar tumour.

In Friedrich's ataxia, the most frequent symptom is nystagmus, which may begin at the same time as the speech disturbance or not until much later. It is generally horizontal and ceases when the eye is at rest. The pupils react only sluggishly to light. Marked optic atrophy never occurs.

In the cerebellar type of hereditary ataxia, nystagmus is very marked, but in addition optic atrophy is very common. Pupillary reflex may here be absent.

Early Optic Atrophy in Locomotor Ataxia.

PEARCE M. BAILEY. "The effect of early optic atrophy upon the course of locomotor ataxia."—*Medical Record*, Nov. 14th, 1896.

This article is of value as being the result of the writer's observations in one hundred and thirty cases of locomotor ataxia, of which twelve showed early optic nerve atrophy.

The deductions are as follows : In about seventy-five per cent. of the cases of tabes in which optic atrophy is an early symptom, some of the other tabetic spmptoms may be late in appearing, or may not develop at all. This is especially the case in respect to the lightning pains and the incoordination of movement. The loss of knee jerk in such cases is very constant.

The most distressing symptoms may develop simultaneously with or immediately succeed the blindness. The association with the optic atrophy of oculo-motor palsies is without prognostic significance.

Puerperal Embolism of the Eye.

M. Janerskierwicz. "Two cases of puerperal septic embolism of the eye."—*Centralblatt für Augenheilkunde*, XX., 1896.

This exceedingly rare condition is reported from Hirschberg's clinics in Berlin. One case was in a woman thirty-eight years old, who had fever after abortion. Eight days after the birth the left eye began to fail and was totally blind in two days. Several abscesses had to be opened, and after a few months the left eye suppurated away. The case recovered. The second case was a woman, thirty-six years of age, who four days after her seventh normal child-birth developed fever, 'which lasted three months. A few weeks later both eyes became swollen and blind. Both ended in phthisis bulbi.

An abscess developed in the right knee.

Action of X-Rays on the Blind.

Emil Bock. "Hint as to the use of X-rays in some forms of blindness."—*Weiner Med. Wochenschrift*, No. 52, 1896.

E. Bloch. "The application of the Roentgen rays in certain forms of blindness."—*Weiner Med. Wochenschrift*, No. 53, 1896.

L. Webster Fox. "Clinical lectures on ulcers of cornea."—*The Medical Bulletin*, January, 1897.

Bock believes that in cases of blindness due to corneal cicatrices with intact retinæ, the X-rays should give rise to images on the retina.

Professor Eder, of Vienna, to whom Bock applied for aid in the necessary technique, declared it quite possible to gather the X-rays into a large pencil and so make them visible to a blind individual possessed of a healthy retina. He further said that letters, &c., must then be composed of material impenetrable to the rays.

Block, in his article the previous week, simply knocks these representations on the head, by pointing out an error in their very essentials.

He shows that in order to perceive anything, the fluorescent material must lie behind the situation of the ocular opacity, *i.e.*, behind the cornea, between it and the retina, a condition which can not obtain.

Dr. Webster Fox, in the course of a lecture on ulcers of the cornea, mentions among others a case in which the cornea ulcerated in the course of small-pox, a dense cicatrix being left.

On experimenting on this patient with the X-rays, it was found that with the fluorescope he could see nothing, but with the naked eye he could accurately describe the phosphorescent colour of a Crookes tube. Hence it would appear that X-rays will not pass through cicatricial corneal tissue although light will.

The Bad Eye Factory.

HENRY LING TAYLOR. " Editorial on an article with above title by Dr. E. W. Scripture."—*Pediatrics*, June 15th, 1896.

Dr. Taylor reviews and reinforces this article of Dr. Scripture's which is indeed worthy of much consideration.

It has to deal with the effects of eye strain in schools.

One per cent. of the cases of myopia are congenital, the remainder are the result of eye-strain, especially in schools. The strain occurring in childhood from holding the work too close to the eyes, this being necessitated by small size of the type or objects.

He inveighs against the kindergartens very justly on account of the fine work, sewing, stringing beads, perforating and drawing on cross ruled paper.

The standard of print should be as follows : The letter not less than $\frac{1}{16}$ of an inch in height, the lines of the letter $\frac{1}{100}$ inch, the distance between the letters $\frac{1}{32}$ inch or more, and between the lines $\frac{3}{32}$ inch or more ; the length of line not over four inches. For children the print should be larger.

Holocain in Eye Surgery.

R. KUTHE. " Experiments with the new local anæsthetic, holocain." —*Centralblatt für Augenheilkunde*, February, 1897.

Yet another local anæsthetic is reported, and as with the others it is at the outstart highly lauded.

Dr. Kuthe's investigations extend over a large number of patients and show that the instillation of a 1 per cent. solution of holocain into the eye, causes anæsthesia of the ocular surface in fifteen seconds, which lasts at least for ten minutes. The instillation can be kept up for lengthened periods without giving rise to the dessication of the corneal epithelium which is so frequently observed under the prolonged use of cocain.

Holocain would seem to have no effect on the pupil or tension.

Judging by experiments on rabbits, holocain is not poisonous except in very large doses, when it gives rise to cramps, muscular spasms, &c.

The original title of the drug is " Diathoxyathenyldiphenylamidin," which pretty well fulfils Mark Twain's definition of an " Alphabet in perspective." *J. W. Stirling.*

Reviews and Notices of Books.

Ewald's Diseases of the Stomach. Translated from the third German edition and revised. By MORRIS MANGES, A.M., M.D., Assistant Visiting Physician and Lecturer on General Medicine at the New York Polyclinic. D. Appleton & Co., New York, 1897.

There is so much of recent date written on diseases of the stomach that 1893, the year when Ewald published the third edition of his admirable work, has long since passed. This work which Dr. Manges has finished, dating his preface August, 1896, fills the double purpose of at once presenting a work on these important diseases fully up to date and presenting it too. in such a way as that the German teaching is available for all English physicians not familiar with the German text.

In addition new illustrations have been inserted and some of the older ones have been re-drawn, while the foot notes and references to articles quoted render this work of increased interest and especially useful as an index to other works.

The index of the work itself is full and the reader may readily find correlated subjects.

The added matter consists largely of the views of authorities, abstracts of whose articles and summaries of whose teachings have been carefully made by the editor.

Among many other points Dr. Manges has dwelt to some length on operative measures recently adopted in various gastric conditions, on the recent writings concerning the diagnostic value of lactic acid in cancer of the stomach, on the relation of tetany to gastrectasis, and on the subject of gastric conditions in pulmonary phthisis. An interesting feature of the book is the discussion of the electrisation of the stomach.

The work of translation is well done, and errors are rare indeed throughout its six hundred pages. When a "distended appetite" (p. 569) is printed a "distended stomach" is surely meant.

Though several books are written on Diseases of the Stomach none come to physicians with higher authority than Ewald's and this translation and revision is recommended to all practitioners interested in the finer points of diagnosis and treatment. W. F. H.

A Hand-book of the Diseases of the Eye and their Treatment. By HENRY R. SWANZY. A.M., M.B., F.R.C.S.I. Sixth edition with illustrations. London: H. K. Lewis, 136 Gower Street, 1897.

Mr. Swanzy's work herewith appears in its sixth edition, the fifth being exhausted within a little over a year of its publication. This is proof enough of the popularity, certainly well deserved, of this book.

Only eighteen months ago, we reviewed the last edition, and what we said at that time in strongest commendation, need not be again repeated.

There have been a few alterations in the contents, the first chapter on simple optics being omitted, the author considering rightly that the student should approach the subject of ophthalmology with a previous knowledge of elementary optics, as well as of the anatomy and physiology of the eye.

What enhances the value of this hand-book, is the article on the relation of the eye to diseases of the brain and nervous system generally, which has been greatly extended in the present edition.

The obscure subject of the tumour of the orbit has also been extended.

As for the rest of the work it is up to the same succinct, thorough style, as the previous editions.

The really high standard of Mr. Swanzy's book in every way renders criticism or praise a task of supererogation.

As a thorough guide on the subject it can not be too strongly recommended both to the practitioner and student. J. W. S.

The Royal London Ophthalmic Hospital Reports. Vol. XIV., Part II., Dec. 1896. Edited by William Lang, F.R.C.S., Eng. London: J. & A. Churchill, 7 Great Marlborough Street.

The December number of the Royal London Ophthalmic Hospital Reports supplies much material of interest, and one's only regret is, that these reports do not appear more frequently, considering the mass of splendid clinical material which is constantly passing through the hands of the staff.

The first article is by Mr. J. Herbert Fisher, M.B., &c., on a case of subhyaloid hæmorrhage, which he investigated.

The blood poured out from a retinal vessel, does not invade the retinal layers, but detaches the internal limiting membrane from the retina and accumulates in the space so formed. This would require the effusion of blood at a moderate pressure from an artery, whereas it is probable, that blood from a vein would be insufficient to effect this separation.

Mr. Treacher Collins is continuing his researches on the embryology of the eye and here discusses the development of the posterior elastic lamina of the cornea. From the result of examinations in the repair of corneal wounds, he assumes that this lamina is originally developed from the Descemal epithelium.

Mr. Devereux Marshall, the Curator at Moorfields, has written a most elaborate article on meningitis following excision of the eyeball for panophthalmitis, mentioning in detail five cases that occurred at Moorfields.

He holds that meningitis is by no means a result of the enucleation in these cases, but that from the post-mortem results, it is evident that the meningitis in many cases preceded the enucleation, and was likely due to embolism from the choroidal vessels.

Mr. Holmes Spicer, deals with striated opacity of the cornea which he holds is due to rumpling of Descemet's membrane or to engorgement of Bowman's tubules, secondary to inflammation of the adjoining uvea.

Mr. Devereux Marshall, also contributes a very useful article on the pathological examination of the eye.

These with a few shorter papers go to make up this number of the reports, which is most instructive. J. W. S.

A System of Practical Medicine by American Authors. By LOOMIS AND THOMPSON. Vol. I, Infectious Diseases. Lea Brothers & Co., Philadelphia, 1897.

The name of the late Prof. Alfred Loomis, who is both editor and contributor to this new practice of medicine, is too universally respected already to render any favourable criticism of his works necessary. Intimately associated with all the greatest medical minds on the continent, he readily secured as collaborators those whose work and experience place them at the high water mark of medical science in America.

Already in the first volume, one finds among its contributors Prof. W. H. Welch, Wm. Osler, J. C. Wilson, James Stewart, Geo. Sternberg, Geo. Dock, et al.

Dr. Gilman Thompson has been associated with the editor from the inception of the undertaking, and since the death of his colleague the entire work fell to his hands.

The first volume dealing with infectious diseases, opens with a lengthy article on malaria, by Welch and Thayer, than which probably no better article on the subject has ever been published in a work on practical medicine. The detailed description of the parasitology by Dr. Welch and the complete discussion of the anatomical and clinical features by Dr. Thayer are such as to render the material of extreme value.

Dr. J. C. Wilson contributes the chapter on enteric fever, which is more especially useful in view of the excellent pages concerning the treatment of that malady. The newer features of diagnosis by serum tests are not considered, his article doubtless having been contributed some length of time before the final publication.

Too much cannot be said in praise of Dr. Park's comprehensive section on diphtheria. The author is peculiarly well fitted for this work, having formerly practiced laryngology and of recent years being engaged as one of the directors of the Bacteriological Laboratories in the New York Department of Public Health. One cannot but commend in particular the pages on diagnosis and on pseudo-diphtheria.

One need merely say that the chapter on tuberculosis, covering about 120 pages is written by Dr. Osler, to realise how greatly enhanced thereby is the value of the work. An essentially practical and scientific article on tetanus is contributed by Dr. James Stewart; among other collaborators are the names of J. P. C. Griffiths, G. Robinson, W. James, etc.

Had some of the writers been enabled to withhold their articles till actually required by the publishers, some of the most recent work in connection with the plague, yellow fever and typhoid might with advantage have been added, though in many other respects the researches of even the past few months have been included in the text. C. F. M.

Practical Pathology for Students and Physicians. By A. S. WARTHIN, M.D., Ph.D. George Wahr, Ann Arbor, 1897.

The author evidently realizes the inefficiency of most of the English works on post-mortem technique and is eager that the student shall have very detailed directions as to how each step in technical pathology shall be carried out. With a few minor exceptions the methods recommended are those usually adopted in the German institutes, and the detail of description leaves but little to be desired.

The essential features of histology are well classified and all needful formulæ are given, with practical hints drawn from the author's own experience.

It is a matter of sincere regret that the publisher has done so little justice to the literature placed in his care, as evidenced by the character of the paper, the hosts of typographical errors and the type itself. It is from this point alone that any adverse criticism should be merited.

C. F. M.

A Treatise on Dental Surgery for Medical Practitioners and Students in Medicine. By A. W. BARRETT, M.B., Lond., M.R.C.S., L.D.S.E. London: H. K. Lewis.

The third edition of Professor Barrett's Dental Surgery will be welcomed by all students. Its clear concise description of the essential facts in dental surgery, illustrated as it is by about sixty well executed diagrams, makes it an almost indispensable work for reference and study by the student. The manual is divided into thirteen different chapters, each containing brief yet sufficiently complete statements of the methods adopted in modern dental surgery. This volume is unhesitatingly commended to all medical and dental practitioners, as one which cannot fail to be an important addition to their library. J. S. I.

Society Proceedings.

MONTREAL MEDICO-CHIRURGICAL SOCIETY

Stated Meeting, January 29th, 1897.

GEO. WILKINS, M.D., PRESIDENT, IN THE CHAIR.

Experimental Cerebral Localisation.

Dr. WESLEY MILLS exhibited in a fresh condition the brain of the rabbit shown at his demonstration before the Canadian Medical Association in August last. The animal was exhibited the day after the operation, which consisted in the removal, not only of the cortical centres for the limbs, neck, etc , but, as the specimen showed, so much of the cerebrum that the ventricles were in part exposed. When exhibited the day after the operation the animal sat up in the usual position, walked and leaped so well that it was difficult to distinguish it from an intact rabbit.

In this instance the brain had been reached by cutting down to the dura, slitting the latter open and turning it aside without removing it. The cerebrum was sliced away, to the extent indicated before, with very little hæmorrhage. Antiseptic precautions were employed. The edges of the dura were approximately sutured, and the margins of the skin wound brought into apposition by the same means.

The wound healed rapidly, and the rabbit remained well and active till recently when it suffered from skin disease and died a few days ago.

Examination showed a scar on the line of the incision in the skin, but nothing of the kind was apparent in the dura. A thin straw-coloured fluid was found beneath the dura, but there were no adhesions either of skin and dura, or between the latter or the cerebrum. Dr. Mills said that without experience it would be difficult to believe that a rabbit should survive such an operation and have to all intents and purposes the same functional capacity as an intact animal for a period of about five months. He thought it proved clearly that so far as the cortex of the cerebrum was concerned there were great differences between different animals below the primates, and between the former and the latter.

Two Cases of Perforated Gastric Ulcer.

Dr. JAS. BELL exhibited two patients. (Will be published later.)

Dr. GEO. E. ARMSTRONG congratulated Dr. Bell on the success of his cases especially the one in which he had sutured the stomach He thought that these cases when operated upon early gave good chances of recovery. Three cases of recovery after suture of a perforated stomach from gastric ulcer had now been reported in Montreal. He agreed with Dr. Bell's diagnosis of the case which he had drained.

The pain in peritonitis from perforation was generally central about the umbilicus, but the point of maximum tenderness determined the differential diagnosis. If this point was over the appendix then the seat of perforation was there, if the stomach was perforated the point would be found over that viscus, and especially so if the case was seen early. In a recent discussion Weir reported that of 74 cases. those operated on before 12 hours had a mortality of 42 per cent. ; those from 12 to 24 hours, 81 per cent. ; and after 24 hours, 93 per cent.

Infection from the stomach was not so severe as that from the appendix and intestines lower down, and Treves' idea, that the upper zone was less susceptible, was better explained by this fact.

It was an advantage before introducing the sutures to strip off the fibrin surrounding the perforation and so have a stomach wall of normal strength and thickness to deal with.

He felt that the question of recovery without operation depended on the seat and size of perforation. If it occurred on the posterior wall or lesser curvature, where adhesions were liable to form early recovery was much more probable than if a large perforation occurred on the anterior wall and the stomach, falling back empty, had nothing to adhere to. Gas and stomach contents would separate it from the anterior abdominal wall in the same way as gas got in front of the liver and spleen in perforation of the stomach or bowel.

A point made by Weir, with regard to the statement sometimes made that no vomiting followed perforation of the stomach, was that a large opening permitted the stomach to empty itself into the abdominal cavity ; but, if the perforation in the stomach wall was small, then the stomach contents would more readily pass upwards and vomiting would occur.

Dr. F. J. SHEPHERD thought, from the fact of there being air in the abdominal cavity and recovery having taken place, that Dr. Bell's diagnosis of perforated gastric ulcer was the only possible one. He asked what the statistics of the pathologists showed the frequency of recovery without operation to be. He did not agree with Dr. Armstrong's idea of the stomach falling back.

That the upper zone of the abdomen was less liable to infection, was due to the fact that the stomach contents were acid and unfavourable to the growth of bacilli, which were thus less virulent.

Dr. A. LAPTHORN SMITH asked if in sewing up the perforation it was the custom to remove the raw edges. He agreed with Dr. Armstrong that if there was a large opening the contents would escape and the organ collapse.

Dr. D. F. GURD asked if the first patient had been anæmic.

Dr. J. G. ADAMI said he could not give the statistics, but it was extremely rare to find evidences of perforation having occurred, although old extensive ulcerations of the stomach were frequently met with.

Dr. BELL, in reply said, in regard to the question raised by Dr. Shepherd and Dr. Adami, that one such case was mentioned by Taylor in the *Medical Record* during 1888. Irrigation and drainage had been carried out, and at the autopsy two months later, an anterior healed perforation had been found.

In reply to Dr. Smith, he said paring the edges had been done in a few cases, but the majority of surgeons did not think it was necessary, as what was really aimed at was closing by a Lembert's suture. The first sutures were only put in to hold the parts together and prevent escape of the contents while the Lembert's sutures were being introduced.

In reply to Dr. Gurd, he stated that the girl showed no symptoms of anæmia.

Hæmorrhagic Cysts of the Thyroid.

Dr. E. W. ARCHIBALD read a paper on this subject. (See page 780 of the April number.)

Dr. F. J. SHEPHERD said that the investigations of Drs. Bradley and Archibald explained the sudden increase in large thyroids which caused dyspnœa and induced the patient to seek relief. Hæmorrhage seldom occurred in a healthy gland, the history was always that of a slow growth before the rapid increase.

It was rare to meet with a pure cyst: in many, a large mass of adenomatous material was found at the base and they differed from the colloid cysts which were easily enucleated.

He had recently operated on an enlarged thyroid in a case presenting all the symptoms of Graves' disease with the exception of exophthalmos. Two solid tumours were removed with complete relief of all the symptoms.

Dr. W. I. BRADLEY felt that Dr. Archibald's paper had elucidated some of the obscure points in his own work, so that nothing now was left in doubt.

Dr. ADAMI said that the interest of these cases lay in their being the connection between the cystic and the goitrous forms. The large proportion of Dr. Shepherd's cases were cystic, and the same thing was found in Reverdin's report of cases examined in Switzerland. It was not generally known that Osler had shown that here in the neighbourhood of Montreal we have the most goitrous region in America and the most favourable opportunity for study, and to thus advance the knowledge of this interesting part of the human frame.

In a series of goitres received from Drs. Bell and Shepherd, he had noted a great tendency to hæmorrhage in some which were not cystic. In adenoma it was quite common to have very thin-walled vessels which ruptured easily.

An Obscure Case of Purpura Hæmorrhagica.

Dr. W. F. HAMILTON reported this case. (Will be published later.)

Dr. J. M. ELDER had seen the patient the day he entered the hospital, and had been struck by his anæmic condition. Having been acquainted with his family for a number of years, he could add to the family history as given by Dr. Hamilton. One aunt had died from profound anæmia with frequent vomiting of blood. There was also a distinct history of tuberculosis on both the father's and mother's side.

Dr. R. TAIT McKENZIE had examined the boy in the fall of 1895 and found him sound in every particular, both under conditions of rest and exercise.

Dr. H. A. LAFLEUR thought a chemical examination of the blood in such cases might be of value. The case seemed somewhat analogous to snake-bite, in which the poison was chemical and not bacterial.

In purpura of such wide distribution fever was not uncommon, although it was often absent in mild cases. It was quite analogous to the fever found in severe cases of anæmia, leukæmia, and other conditions in which there was a profound alteration of the blood.

Stated Meeting, February 12th, 1897.

GEORGE WILKINS, M.D., PRESIDENT IN THE CHAIR.

Comminuted Fracture of the Lower Jaw.

Dr. J. ALEX. HUTCHISON exhibited the case and read the following report:

Ralph B., aged 7 years, entered ward L, Montreal General Hospital, September 26th, 1896.

A short time previously (one hour) he had fallen through an elevator shaft, a distance of about thirty feet. On examination by me on the following day (Sunday), it was decided to endeavour to bring the parts together by sutures. This I did on the 28th, the second day following the accident. After anaesthesia by chloroform, examination showed the following:

A dirty contused wound on the right side under the border of the lower maxilla leading down to the fracture and communicating with the mouth. The bone was shattered and several teeth gone. The canine of lower set was found imbedded in the cheek, passing through a rent in the mucous membrane. On left side, the mucous membrane was torn and the bone fractured opposite the canine tooth.

Owing to the two fractures and the violence of the blow the central portion of bone was very loose, and silk sutures were applied on each side, on the left bringing the bone in good position, but on the right, owing to the loss of bone there was a considerable space which allowed the bone to fall away. After cleaning the part a leather splint was applied. Suppuration followed, and sutures gave little support.

Dr. J. S. Ibbotson, the dental surgeon to the Hospital, was asked to make an inter-dental splint of rubber, which he did, opposing this by a plaster of paris bandage round the jaw. This successfully held the parts in position till union took place. The patient now has a good jaw, the lower teeth that remain are in fair position. I bring the case before you to show the value of the inter-dental splint, and the good result in so grave an injury.

The notes are from report of my house surgeon, Dr. H. K. McDonald·

Removal of a Fibroma of the Mesentery with Resection of nearly Eight Feet of the Small Intestine.

Dr. F. J. Shepherd stated that the man from whom the tumour and intestine had been removed was 28 years of age, and had first noticed the enlargement of the abdomen over a year ago. He had never suffered any pain. The operation was performed on January 18th, 1897, and a round smooth tumour was seen attached in front to the abdominal wall by adhesions but apparently free at the sides. On enlarging the incision and delivering the tumour it was found that about 2½ feet of gut was intimately associated with its under surface and that the tumour grew from between the layers of the mesentery. To remove the tumour it was necessary to tie a number of mesenteric vessels and this deprived a large amount of gut of its nutrition. Within an inch or two of eight feet of small bowel had to be removed before living bowel could be reached. The two ends were united by immediate suture. The bowel removed was chiefly ileum, only about six inches of the lower end of the ileum being left. There was an attachment of the tumour also to the transverse colon but it seemed to grow from between the layers of the mesentery. During the operation there was a great deal of shock and three quarts of saline solution were introduced into the veins of the arm.

The patient got well without a bad symptom and, with the exception of a tendency to flatulency and slight diarrhœa, he was well and gaining flesh Dr. Shepherd remarked that as far as he was able to find out this was the greatest length of bowel successfully removed, so far. Kocher, of Berne, had removed 6 ft., 10 in.; Koeberle of Strassburg, 6 ft. 6 in.; and Elliott, of Boston, 4 ft. He said that at some future time he intended writing a paper on the subject and would deal more fully with the history of intestinal resection.

Dr. JAS. BELL considered this a remarkable surgical triumph. The difficulty of removing an enormous tumour, situated between the folds of the mesentery and displacing such important structures as the aorta and vena cava, was very great; but the removal of so large a portion of the intestine as well, was a remarkable achievement. The removal of the intestine for gangrene could not be compared with this.

Some years previously he had performed experiments on dogs and demonstrated that considerable portions of their intestines could be removed with success. By this means he had gained considerable experience of the different methods of uniting the ends of the bowel. Of those united with the continuous suture in some cases a constriction was subsequently found at the point of union; of those done by the through and through method the results were good. He, however, had not realised then that the dog was not so prone as the human being to suffer from peritonitis after such operations.

In man, Dr. Bell stated, he had united the cut ends in almost every way and in cases of direct union had found the bowels closed off well when fatal results had occurred from other causes. He had been greatly impressed by Maunsell's method especially by a modification described in the last number of the *Annals of Surgery*.

He had no criticism to offer on Dr. Shepherd's case but wished to congratulate him on one of the greatest achievements on record in abdominal surgery.

Dr. WESLEY MILLS felt this was a great surgical triumph but with regard to the effect of removing such a large portion of intestine the case was one from which we are likely to get physiological light rather than one on which he could throw light. His experiments upon the alimentary tract of dogs had impressed him with the danger of these operations being followed by shock rather than peritonitis.

Of late years the tendency had been rather to exalt the intestines functionally at the expense of the stomach, but both had much reserve power and if this case succeeded it would be clear evidence of this.

Dr. LAPTHORN SMITH was pleased to know that such a case had occurred as it would encourage less daring operators to be a little more bold. He thought that much of so called shock was due to hæmorrhage, the anæsthetic, or sepsis.

Dr. WM. GARDNER thought that a point often overlooked, in considering the shock following long operations, was refrigeration, and cited a case in support of this.

Dr. G. G. CAMPBELL drew attention to a fact which he had demonstrated by examination of the urine, that metabolism was much diminished during anæsthesia, becoming less and less as time passed. Thus, during long operations this might be a cause of refrigeration.

Dr. F. J. SHEPHERD intended reporting the case in full later on and so had not given the details of the history. It was not known what shock was, but no doubt hæmorrhage was often the source of shock and this man would have died if he had not had the intravenous injection.

A Respiratory Symptom of Tobacco-Poisoning and its Experimental Investigation.

Dr. W. S. MORROW in this paper described a peculiar form of breathing which he had observed in a number of cases of tobacco-poisoning. He read reports of the three most typical cases he had seen. The symptom referred to consisted of audible deep inspirations occurring at intervals, and often accompanied by a feeling of lack of air. He referred to a case reported by Chapman, of Louisville, at the Mississippi Valley Medical Society, in 1891, where similar symptoms were observed. He had been unable to find any explanation of this peculiar form of breathing and had consequently undertaken a series of experiments, in the hope of throwing some light on it.

He had tracings of the breathing showing the effects on it of poisoning with tobacco in rabbits and dogs; other tracings showed the effect of tobacco after first cutting the pneumogastric nerves; others again, the effects of stimulating these nerves at various stages of poisoning. Still others exhibited the effects of various degrees of ether and chloral for comparison. As a result of these cases and experiments the following conclusions were reached :—

A fairly common symptom of tobacco-poisoning is a deep gasping inspiration, occurring at intervals, and sometimes quite audible. This may be practically the only symptom complained of. It is probably due to a paralysing action of the drug on the respiratory centre, affecting especially the expiratory division but also diminishing the irritability of the whole centre to afferent impulses. This symptom may persist from a few days to several months after the tobacco is discontinued.

Dr. N. D. GUNN said that clinically the action of tobacco was supposed to be principally upon the heart and he thought that Dr. Morrow should have investigated this point as well.

Dr. WYATT JOHNSTON asked concerning the occurrence of this sign in poisoning by other drugs; if this were not the case it might turn out to be a valuable physiological test for nicotine poisoning.

Dr. WESLEY MILLS expressed satisfaction that a paper of this kind had been brought before the society. It was the first instance in this country of such an application of the graphic method to the solution of a definite clinical problem.

Dr. F. J. SHEPHERD congratulated Dr. Morrow on having been able to verify his diagnosis by this method. Such a paper was most valuable to those outside of laboratory work from a practical standpoint.

Dr. W. F. HAMILTON asked if Dr. Morrow had considered the possibility of this respiratory symptom having been due to the influence of the poison upon the heart.

Dr. MORROW in replying to Dr. Gunn said that experimental evidence went to show that tobacco was a stimulant to the heart. He himself had seen the heart beating vigorously after death from respiratory failure in the rabbits poisoned with tobacco from which his diagrams were obtained.

To Dr. Hamilton he said that even if circulatory changes could cause some change in the respiration, they could not explain the failure of the respiratory centre to respond to stimulation through the pneumogastric nerves. He did not think the peculiar breathing he had observed could be explained through any change in the circulation.

He could not answer Dr. Johnston's questions as he was not sufficiently acquainted with the literature of other poisons.

THE

The Montreal Medical Journal.

A Monthly Record of the Progress of Medical and Surgical Science.

VOL. XXV. MAY, 1897. No. 11.

BRITISH MEDICAL ASSOCIATION.

According to accounts received from England, the steamship companies are already finding an active demand for berths in connection with the coming meeting, and the boats journeying direct to Canada are rapidly being filled. At this rate we ought soon to be able to estimate approximately the number of visitors coming from the Old Country.

Since our last issue the list of officers has been completed, Dr. Herman M. Biggs, of New York, having accepted the invitation of the Council to deliver the address in Public Medicine. No better choice could have been made, for Dr. Biggs is the scientific head of the most progressive and best conducted health department upon this continent, that of the City of New York; and to his endeavours are largely due the foremost position attained by it. We may safely predict that his address will be one of the features of the meeting.

The Canadian officers of the various sections are now fully engaged in drawing up the provisional programme of each section, and in a very short time we shall be able to announce the general discussions which are to take place and the names of the leaders of these discussions, together with a list of those who have promised papers. Here the various sections find themselves in most cases confronted with a difficulty, that even with the best wishes in the world it will be difficult to give a hearing to all those who desire to read papers before the Association. We may take it in general each section will be in session for altogether not more than twelve hours: at a minimum four hours will be devoted in each section to general discussions. This leaves eight hours for the reading of papers and for the discussions which may arise out of individual papers. Thus, even though no one is allowed to read a paper exceeding a quarter of an hour in length it would seem that only about twenty-five papers can be heard, and the President and Vice-Presidents of the sections will have a delicate matter before them in asking for papers and in determining what shall be read in full and what by title. It is here worthy of note that all papers read before the Association become its property, and must in the first place be offered to the *British Medical Journal* for publication. Invitations to the leading members of the profession in the United States have already been forwarded.

We are glad to state that by an order in council the Provincial Government has subscribed $2,000 to the purposes of the Association. Thus, altogether, through the public spirit of the Dominion Government, the Provincial Government and the Municipal Government of Montreal, $10,000 has been granted towards the coming meeting.

While several of the leading citizens have of their own free will offered pecuniary aid, it has been, after mature debate, considered advisable not to beg subscriptions from the general public, though aid in other directions will be gladly received. It has however, been thought well to obtain from members of the profession a guarantee fund. The meeting is being financed with great care and it is certain that this fund will be scarce drawn upon.

We note in the number of the *British Medical Journal* for April 17th, just to hand, a short editorial upon the cost of last year's meeting at Carlisle. After paying all out-goings there remains a balance in hand of £304 18s. 2d., giving a return of 10s. in the pound to the guarantors and still leaving in hand a sum sufficient to defray certain gratuities and acknowledgements of personal services which the local committee desired to make. Excluding these, the cost of the meeting to the members of the Border Counties Branch was considerably under £200, though the meeting was eminently successful, as already mentioned in these pages; indeed, our "British" contemporary quotes our words of commendation. We certainly cannot expect to conduct the meeting at so singularly low a rate; the cost of cabling and of correspondence with the Council must alone be a considerable item; but there is no reason why our meeting should cost more than ten times as much as that of Carlisle, however profuse be our hospitality. We are glad to announce that the citizens of Montreal are coming nobly to our aid, and that Sir Donald Smith, foremost as ever in good works, has already invited the members of the Association and its guests to a reception at 1157 Dorchester street upon the evening of Wednesday, September 1st. The Golf Club has also thrown open its links to members of the Association during the meeting. Others, again, are offering entertainments.

We note in several journals, and indeed one of the official announcements of the Association, one or two typographical errors which may cause some confusion, thus we therefore publish this in an amended and extended form.

PROVISIONAL PROGRAMME.

Wednesday, Aug. 18th to Thursday, Aug. 26th.

Meeting of the British Association for the Advancement of Science at Toronto.

Thursday, Aug. 26th to Monday, Aug. 30th.

Excursion for Members and Guests of the British Association, from Toronto via Niagara, Kingston, The Thousand Islands. Ottawa, etc., to Montreal.

Monday, Aug. 30th.

Meeting of the Canadian Medical Association at Montreal.

BRITISH MEDICAL ASSOCIATION.

Tuesday, Aug. 31st.

12.00 a.m.—Service in the English Cathedral.
2.30 p.m.—Windsor Hall : Opening ceremonies and addresses of welcome.
3.00 p.m.—Address by the President-Elect, T. G. Roddick, M.D., M.P.
4.90 p.m.—Garden Parties, Excursion around the Mountain, etc.
9.00 p.m.—Soirée at Laval University.

Wednesday, Sept. 1st.

10.00 a.m.—McGill University : Opening of sections.
3.00 p.m.—Windsor Hall : Address in Medicine, by Dr. Wm. Osler.
4.00 p.m.—Excursion down the St. Lawrence, etc.
9.00 p.m.—Reception by the Hon. Sir Donald A. Smith, G.C.M.G.

Thursday, Sept. 2nd.

9.30 p.m.—McGill University : Sectional meetings.
1.30 p.m.—Lunch on the Mountain.
3.30 p.m.—Windsor Hall : Address in Surgery, by Mr. T. Mitchell Banks.
4.30 p.m.—Excursion across the Island, etc.
7.45 p.m.—Annual Dinner of the Association, Windsor Hall.

Friday, Sept. 3rd.

9.30 a.m.—McGill University : Sectional meetings.
3.00 p.m.—Windsor Hall : Address in Public Medicine, by Dr. Herman M. Biggs, and concluding General Meeting.
4.15 p.m.—Excursion to Ste. Anne's and down the Lachine Rapids.
9.00 p.m.—Soirée at McGill University.

Saturday, Sept. 4th.

Excursions to Ottawa, Quebec, Kingston, Lake Memphremagog, etc.

THE OTHER SIDE OF THE CASE.

In the October number of the Journal we published an editorial upon the use of a forged testimonial by the vendors of a quack medicine, which we characterised as flagrant and unscrupulous. We are still of the opinion that we were justified in our action, and that the vendors and proprietors by their action laid themselves open to the severest animadversions.

As the result of an action begun against them, and then only when they had contested the granting of an injunction to restrain publication, the vendors published an ample apology in the two leading

English medical journals and the leading American organ of our profession. At the same time we are perfectly willing to publish the explanations of their conduct forwarded to us by the Od Chem. Co., the vendors of the preparation in question.

"It is true," they write to us, "(that) we recently published in a pamphlet issued by us, entitled 'Witness Box No. 4,' relating to our product 'Sanmetto,' a testimonial purporting to have been given by Dr. W. B. Ransom, of Nottingham, England. The testimonial in question was received on a postcard, purporting to come from Dr. Ransom, but upon his affidavit as against any confirmatory particulars, including similarity of hand-write *(sic)* in the signature . . . we concluded that we had misguidedly made use of his name in connection with Sanmetto, and apologized to him for it. . . . . The above postcard referred to, having all the ear-marks of genuineness, even down to the minutest circumstance, and no motive of forgery apparent, we were naturally not led to question its authenticity at the time of its publication."

The pathologist for the Board of Health of the Province of Quebec desires to call attention to the fact that he has prepared a number of small outfits to practically test the amount of disinfection secured by our present methods, and will furnish the same to any physician applying for the same.

The outfit consists of pure cultures of suitable bacteria spread out on smooth surfaces and enclosed in small porous packets. The cultures are impregnated with bacteria, which while themselves harmless have a resistance to disinfectants equal to that of the common disease bacteria, but unless specially requested these test objects do not contain spores.

These packets are marked in four colours and are accompanied with the following directions:

Place packet A (red mark) a few feet from the spot where the disinfectant is generated, leaving it uncovered on a table, chair, etc.

Place packet B (yellow mark) at a spot in the apartments to be disinfected as far as possible from the source of the disinfectant, leaving it uncovered on a table or chair, etc.

Place packet C (green mark) in a place where there will be only a slight obstruction to the access of the vapours, *i.e.*, in a pocket of a dress or beneath a cloth or carpet.

Place packet D (blue mark) so that it will be in a place where the vapours will only penetrate with difficulty, *i.e.*, rolled up in several folds of blankets or placed inside or beneath a mattress or pillow.

After the disinfection is over they are to be replaced in the envelope and posted without delay to the Laboratory of the Board of Health. The packets are on no account to be opened, and should not be kept for more than three or four days before using. A report upon the result of the test will be forwarded as soon as it can be decided whether the bacteria have developed or not.

The Twenty-fifth Annual Meeting of the American Public Health Association will be held at Philadelphia, Pa., October 26, 27, 28, 29, 1897.

The Executive Committee have selected a number of topics for consideration, upon which special committees have been appointed. Papers will be received upon other sanitary and hygienic subjects also.

It is expected that the Philadelphia meeting will be largely attended. Its location is central, and the local Committee of Arrangements are already hard at work for its success.

All communications relating to local matters should be addressed to Dr. Benjamin Lee, Chairman Local Committee of Arrangements, No. 1532 Pine St., Philadelphia, Pa.

IRVING A. WATSON,
Secretary, CONCORD, N.H.

We are asked by the Curator of the Medical Museum, at McGill University, to state that the very valuable collection of calculi formed by Dr. Fenwick, and added to largely of late years by the members of the Medical Faculty and others, is at present being classified and mounted so as to form a very leading feature in the Museum. He would be glad to receive from old members of the university and from Canadian practitioners in general further contributions so as to make the collection thoroughly representative. Renal and vesical calculi, biliary calculi, salivary, pancreatic and other concrements will be duly acknowledged, both upon receipt and in the Museum Catalogue.

The many friends of Dr. T. Johnston-Alloway, will be pleased to hear that his health is now re-established, and that he is resuming practice at once.

The following appointments to the Resident Staff of the Montreal General Hospital have been made for the ensuing year: Drs. Pennoyer, von Eberts, Wainwright, Robertson, Harding and Gurd.

Dr. Fisk, who has been the Resident Medical Officer at the Montreal

General Hospital Section of the Civic Hospital for the past year, has been reappointed as Senior Resident Medical Officer. Dr. MacTaggart has been reappointed House Pathologist.

At the Royal Victoria Hospital the appointments to the Resident Staff are: House Physicians, Drs. Robins, Argue, McDougall and McCallum. House Surgeons, Drs. Feader, Archibald, Keenan, and Roy. House Ophthalmologist, Dr. Campbell. House Gynaecologist, Dr. Bruce Shaw. Dr. H. K. Wright, has been appointed Medical Registrar.

At a recent meeting of the Board of Trustees of the Jefferson Medical College, Philadelphia, Dr. J. Chalmers DeCosta was elected Clinical Professor of Surgery. Dr. DeCosta has been connected with the College for many years, and has recently been Demonstrator of Surgery and Chief of the Out-patient's Department. The new appointment is made in recognition of his long service and valuable contributions to surgical literature.

NEW BOOKS, ETC., RECEIVED AND NOTED.

Clinical and Pathological Report of a Case of Cerebral Syphilis. By George Emerson Brewer, M.D., and Pearce Bailey, M.D. Reprinted from the Journal of Cutaneous and Genito-Urinary Diseases, Sept., 1896.

Notes on some of the Newer Remedies used in Diseases of the Skin. By L. Duncan Bulkley, A.M., M.D., New York. Reprint from the Journal of the American Medical Association, Nov. 28th, 1896.

Actinoymcosis. By Parker Syms, M.D., New York. Reprint from the Annals of Surgery.

X-Rays. By Edward P. Thompson, M.E., E.E. D. Van Nostrand Co., New York.

Hand-book of Diseases of the Eye. Swanzy. 6th Edition. H. K. Lewis, London.

Braithwaite's Retrospect of Medicine. Vol. CXIV. January, 1897. Putnam, New York.

Transactions of the College of Physicians. Third Series. Vol. XVIII. Philadelphia. 1896.

Trifacial Neuralgia. Reprint from Transactions of Medical Society of Virginia, 1896. Anal Fistula; Peritonitis; Laparotomy; Recovery. Reprint from Cincinnati Lancet-Clinic, July 4th, 1896: Surgical Melange. Reprint from do., Sept. 26th, 1896; Twelve Deaths. Reprint from do., Sept. 12th, 1896. Chest Surgery. Reprint from do., Sept. 5th, 1896. Branchial Cysts. Reprint from do., Dec. 9th, 1896. By Merril Ricketts, Ph. B., M.D.

THE
MONTREAL MEDICAL JOURNAL.

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Original Communications.

THREE CASES OF CARCINOMA OF THE MIDDLE AND UPPER PORTIONS OF THE RECTUM.[1]

BY

James Bell, M.D.,

Professor of Clinical Surgery, McGill University; Surgeon to the Royal Victoria Hospital; Consulting Surgeon to the Montreal General Hospital.

I venture to bring before the Society to-night the reports of three cases, upon which I have recently operated, of carcinoma involving the middle and upper parts of the rectum. The relative frequency of this condition, the obscurity of the symptoms attending it in its earlier history, and the successes achieved by modern operative methods of treatment are my reasons for bringing these cases before you.

They are as follows:

Case I.—H. B., æt. 58, was admitted to the Royal Victoria Hospital, on the 13th of June, 1896, complaining of diarrhœa and hæmorrhage from the bowels, and loss of flesh and strength. Diarrhœa and hæmorrhage had lasted for about a year. Loss of flesh had become noticeable about six months before coming under observation, and he had had three attacks of intestinal obstruction with stercoral vomiting in the previous December, January, and February respectively. He had also had another attack of obstruction five weeks before coming to hospital. His family and personal history were excellent. Examination of the rectum revealed a hard nodular indurated mass extending lower on the posterior wall of the bowel than on the anterior. Its lower border was fully two and a-half inches from the anus. The upper limit could not be felt from the abdomen. There was no evidence of disease in the other organs. On the 16th of June the abdomen was explored, and the first stage of an inguinal colotomy performed. The upper limit of the growth was defined well within the peritoneal cavity and there was no evidence of invasion of the contiguous lymphatic glands. On the 28th of June, the bowel was opened and on the 29th the mass was excised through Heinecke's sacral incision. The patient was very weak and bore the operation badly but rallied quickly. For some days his condition caused anxiety but on the whole recovery was uneventful. About four inches of the bowel was removed with a mass of infiltrated glands which lay in the hollow of the sacrum. It was impossible to reunite the ends of the bowel and the proximal end was therefore brought out and attached in the upper angle of the wound after removal of the left half of the lower portion of the sacrum. The distal end was inverted and closed by suture. The patient went home on the 5th of August, and wrote me about two months later concerning the colotomy opening. He then stated that his health was perfect, his strength had returned and he had gained fifty pounds in weight. On the 17th of February, eight months after operation I again heard from him through his physician who stated that his health was good and that he was actively engaged in his business. The pathological report of the tumour was given in the following words: "Adeno-carcinoma of rectum."

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[1] Read before the Montreal Medico-Chirurgical Society, April 9th, 1897.

CASE II.—C. E. F., æt. 45, first came under observation on the 23rd of June, 1896, with a stone in his bladder. He had suffered for three years with symptoms which seem to have indicated stone in the right kidney. About one year before coming to hospital the symptoms became distinctly vesical. The stone was removed by lateral perineal lithotomy on the 26th of June. Recovery was uneventful and patient left hospital on the 28th of July for his home. On the 4th of September, he returned complaining of inability to evacuate his bowels and of hæmorrhages from the rectum. On digital examination a hard annular ring of irregular indurated growth could hardly be touched by the end of the finger, quite three inches from the anus. There was no mass palpable from the abdomen, and no evidence of disease in any other organ. His family and personal history were good. The first symptom noticed in the case was constipation while in bed after the lithotomy operation, less than three months before re-admission for the rectal disease. On the 18th of September, the abdomen was opened and explored in doing the first stage of an inguinal colotomy. The upper limit of the growth was defined. There was no evidence of lymphathic involvement, but one of the appendices epiploicæ of the sigmoid flexure presented an appearance of containing a small spot of cancerous infiltration and was removed.

Microscopical examination confirmed the diagnosis of cancer in this little mass. The bowel was opened on the 18th, and the growth removed through Heinecke's incision, on the 28th of September. The portion of bowel removed was about four inches in length and included all the new growth which the pathological report states was: "Adeno-carcinoma of rectum." It was impossible to approximate the ends of the bowel and the proximal end was sutured to the upper angle of the wound, the left lower quadrant of the sacrum having been removed as in the preceding case. The lower end of the rectum was inverted and closed by suture. Recovery was uneventful but slow, and the patient was discharged on the 6th of November, thirty eight days after operation with the wound still partially open. In this case there was early metastasis, and the patient died on the 9th of January, 1897, three and a-half months after operation. On the 13th of November his physician wrote me that the wound had made no progress toward healing and that he had that day discovered hard nodules in the parietal peritoneum, in the region of the stomach. On the 29th of January, 1897, he again wrote me that the patient had died on the 9th of that month with a very large liver and nodules all over the parietal peritoneum. By inference there was no local recurrence.

The course of the disease in this case which occurred at a comparatively early age (45) was extremely rapid, producing obstruction within three months of the first appearance of symptoms and spreading by metastasis which had already begun at the time of operation.

CASE III.—Mrs. A. McL., æt. 50, was admitted to the Royal Victoria Hospital, December 8th, 1896, complaining of pain during defecation, constipation and hæmorrhage from the rectum. She was spare, pale and emaciated and gave the following history of her illness:

Two years before coming to hospital she began to pass blood occasionally at stool. In a very short time blood was found with every stool and soon after mucus began to appear with each stool as well. Constipation was noticed about the same time as the onset of the bleeding and grew gradually worse, so that for a long time she had never had a motion without a purgative. Diarrhœa appeared for the first time two days before admission. Pain was only noticed six months before coming to hospital and was felt in the rectum and anus during, and for a short time after defecation. There was also a dull aching pain felt in the pelvis and for the last few weeks, she had been losing flesh and colour and suffering from flatulence for six months. Her menopause had occurred about one year before admission and with the exception of some slight dyspeptic symptoms vaguely described r due to "liver trouble" she had always been in good health. Her mother had died of cancer of the breast, but apart from this there was no evidence of hereditary predisposition. On examination the lower extremity of a raised irregular annular mass involving the whole circumference of the bowel, friable and bleeding when touched, was felt at about two inches and a-half from the anus. The upper limit could not be felt from either rectum or vagina, and it was not palpable from the abdomen. There was no evidence of lymphatic involvement nor metastasis and the other organs were normal. On the 17th of December, an inguinal colotomy was performed. Exploration of the abdomen showed the upper limit of the growth to be well within the peritoneal cavity but there was no glandular enlargement. On account of an attack of influenza, excision of the mass was deferred till the 7th of January, 1897. It was exposed by Heinecke's incision. A segment of the bowel between four and five inches in length and including the new growth was removed and the proximal end brought down and sutured to the distal extremity. The patient took ether badly and was from the first very much embarrassed with mucus in the air passages and a pretty severe bronchitis followed; with this exception, the operation was well borne and the subsequent recovery uneventful. The wound was packed, around the bowel, with iodoform gauze, (as were the previous cases). I did not carry out my intention of replacing and suturing the divided lower portion of the sacrum, as the bronchitis for some time contra-indicated ether anæsthesia but they fell together, slightly inverted, and united very nicely. The bowel ends also united perfectly, and a large proportion of the fæces is now found per anum, although there is of course some evacuation through the inguinal opening. There is some slight narrowing at the line of suture of the rectum, but no sign of recurrence of the growth. I have advised the patient to wait for some months at least before having the colotomy wound closed, for fear of cicatricial stenosis of the rectum at the line of suture, or recurrence of the disease in loco. As to the nature of the growth, the concluding sentence of the pathological report is as follows:—"The specimen must be regarded as adenoma of the rectal mucosa undergoing change into colloid cancer."

With regard to the frequency of the occurrence of carcinoma in the rectum, I may be permitted to quote Mr. Bland Sutton's statement, (Tumours innocent and malignant) that "of every one hundred cases of carcinoma of the intestine seventy-five occur in the rectum," and it must be borne in mind that this does not include invasion of the rectum by epithelioma extending from the anal margin (a lesion which is not to be confounded with the one under discussion). The difficulties of diagnosis are well illustrated in the cases here reported. In the first case no rectal examination had been made, and no suspicion of rectal cancer was entertained until the patient had suffered for more than a year and had become emaciated and debilitated to the last degree, principally no doubt by the absorption of toxic products from the ulcerated surface of the growth and the retained fæces, for although the chief symptom had been diarrhœa, the preliminary colotomy discovered a chronic obstruction with quantities of retained fæces.

In the second case, although I had my finger in the rectum more than once in examining and operating for stone, and although the patient's chief and practically only complaint while under treatment for stone was that he could not get his bowels satisfactorily evacuated, there was no suspicion of carcinoma or any form of rectal tumour until two months later, when the passage of blood by the bowel caused his physician to explore the rectum, with the result that he discovered the growth. In another case which recently came under my observation, moribund with peritonitis, the autopsy discovered a cancerous growth high up in the rectum, above which perforation of the bowel had occurred, allowing the contents to escape into the peritoneal cavity, and yet there had been no suspicion of a rectal growth. It will, therefore, be seen that early diagnosis is quite exceptional and in fact, as a rule, the diagnosis is not made until marked obstruction or hæmorrhage suggests rectal examination. The physician's rule should be, I venture to think, in all cases of long standing derangement of intestinal function, where a definite diagnosis cannot be made and when no palpable tumour can be discovered in the abdomen, to make a thorough rectal examination.

It was the late Prof. Volkmann who laid down the rule more than twenty years ago, that cancer of the rectum, when radically removed, showed no more, perhaps less, tendency to return than cancer of the breast. Prof. Kocher was the pioneer in the attempt to reach the rectum from behind—a method which was developed by Kraske, and which is now recognised as the only possible method of dealing with neoplasms situated high up in the rectum. Thanks to the improvements in our modern methods of operating, we no longer hesitate to open the peritoneal cavity, which is always necessary in these high operations. It would be out of place here to discuss the different methods employed at the present time to reach the rectum through the sacrum. Suffice it to say that by the original method of Kraske the left half of the sacrum from the level of the third foramen and the whole of the coccyx were removed. By the methods of Heinecke and of Rehn and Rydigier no portion of the bone is removed; it is simply temporarily displaced with its adherent soft parts—in the former (Heinecke) by a T shaped incision, one arm of which passes across the sacrum on a line with the third foramen, and the other at right angles to it down the centre of the lower half of the bone—the two lateral halves being displaced outwards. In the latter (methods of Rehn and Rydigier) an incision is made along the left lateral border of the sacrum and coccyx through the soft parts. This is joined by a transverse incision through the bone (and soft parts) at the same level as in the previous operation (3rd foramen), and the flap containing the lower half of the sacrum and the coccyx displaced to the right. By either method the bowel is fully exposed and is then easily dealt with.

In conclusion, I would submit the following, as general rules for guidance, in the treatment of malignant neoplasms of the rectum:

1. In accordance with the principles generally recognised in the operative treatment of malignant disease, when the neoplasm is sufficiently localised it should always be removed.

2. In order to determine this point, (localisation), as well as for safety (from sepsis), during and after the operation, a preliminary inguinal colotomy should be the rule.

3. That the ideal operation is, the excision of the growth through healthy tissues and approximation and union of the ends of the bowel, so as to re-establish its lumen. The ideal, though here as elsewhere, seldom attainable, should always be aimed at: and to this end it is better to make the incision in exposing the rectum in such a way that the displaced portions of the sacrum may be replaced if it be thought necessary or desirable to do so.

4. That the sacral route is the only one which can be satisfactorily employed for the removal of lesions in the middle portion of the rectum.

A CASE OF EXTRA UTERINE FŒTATION—OPERATION—RECOVERY.[1]

BY

M. O. KLOTZ, M.B., TOR.

Mrs. E., æt 30, married ten years; three children, the youngest of whom is three years old; her general health has always been good; she had two miscarriages shortly after her marriage, but none since; her menstrual periods have always been regular.

About the middle of last summer she commenced to have a profuse leucorrhœal discharge which continued more or less till about Christmas, 1896. The discharge at the end of each menstrual flow became much augmented and very offensive. During the summer she consulted a Montreal physician who prescribed for her and under his treatment she made some improvement.

The last menstrual period occurred about Dec. 17th or 18th, 1896 When her menses did not return in January, she began to suspect that she was pregnant, but had no special signs other than a peculiar indescribable feeling in the breasts.

The first sign of trouble appeared on Saturday evening, Feb. 13th. On suddenly rising from the sofa on which she had been lying, to rebuke one of the children, she felt a sharp stitch low down on the right side. From that time on she always felt more or less pain in the right inguinal region, but for the next few days the pain did not interfere with her household duties to any great extent.

Tuesday evening, Feb. 16th, while standing at the piano, she felt a paroxysm of pain in the right side again, and became weak and faint. she sat down and after a drink of water was refreshed but the pains were more or less severe all that night.

I first saw the patient on the afternoon of the following day. That morning, *i. e.*, Feb. 17th, she had had several severe 'spasms,' as she called them, in her right side and said she felt afraid of a miscarriage. Superficial examination showed the right ovarian region to be very tender, but no swelling was discoverable; the uterus by external palpation was tender. No vaginal examination was made. There had been no vaginal discharge of any kind since the week preceding Christmas. Bowels regular, pulse and temperature normal, tongue moist, slight headache. Absolute rest in bed with liquid diet and a mixture of Bromide of Potass and Viburnum were prescribed.

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[1] Read before the Medical Society of Ottawa, March 26th, 1897.

Feb. 18th. The patient expressed herself as feeling much better, no severe pains, local tenderness still persisted.

Feb. 19th. Had a restless night, pulse 100, temperature 9 9 F. During the day she was comfortable but about 10.30 that evening I was hurriedly sent for. I found her suffering severe lancinating pains in the right ovarian region, also over the front of the uterus, bowels had not moved that day ; I gave her Sulphate of Morphia gr. ¼ hypodermically at once, to be repeated every three hours till relieved ; also ordered hot cloths to be kept applied to the abdomen.

I made a vaginal examination which was extremely painful ; the posterior vaginal wall was somewhat swollen and tender, the cervix slightly softened and in a state of chronic inflammation, several small cysts presenting on the surface, the uterus was enlarged, slightly movable, very slightly tender and somewhat anteflexed ; left broad ligament, tube and ovary apparently normal, the right adnexa were so extremely tender that any attempt at a satisfactory examination was out of the question.

Feb. 20th. Condition remained unchanged ; prescribed Acetate of Morphia, gr. ⅛, and dilute Hydrocyanic acid ♏ iii, every three to four hours, as required, to relieve the pain, also hot linseed poultices to be kept applied to abdomen. Ordered a glycerine enema, ℥ss ; two were given but with no effect. Gave Calomel, gr. ii, at 10 P.M., which the patient vomited.

Feb. 21st. A Seidlitz powder was given at 8 A.M., but was rejected. The diet was reduced to milk and soda water ; the pains were more or less severe all day ; the bowels remained obstinately constipated, some tympanites : the tenderness extended from the right side over the front of the uterus and somewhat towards the left side ; the most acute point however was over the right ovary.

About 7 P.M., the pains suddenly became very severe and paroxysmal in type and the patient twice seemed to faint. I was sent for and found her somewhat revived. She had vomited her milk and soda water in the morning, retained it during the afternoon, but about 6.30 P.M., commenced vomiting again and this marked the onset of the acute pains. During the afternoon she had been supplied with some orange juice contrary to orders. The pains were most marked in the right iliac region, sharp, sudden and stabbing in character and put the patient into the most intense agony. I gave her Sulphate of Morphia, gr. ½, hypodermically.

The whole history now seemed to point more and more towards an extra-uterine pregnancy. One missing link however was the absence of any sanguineous discharge ; thus far there had been absolutely no discharge whatever. At repeated vaginal examinations I found the right appendages to be very tender, but owing to the pain caused to the patient could not definitely map out any swelling.

The whole history so far, of having last had menses on Dec. 17th, 18th, none appearing in January, the subjective symptoms of a peculiar feeling in the breasts such as she experienced only when pregnant, the sudden attack of intense paroxysmal pain on the right side, more or less constant, the acute attack of this evening, Feb. 21st, with fainting attacks, all this array of symptoms was so strongly suggestive of an extra-uterine fœtation that I decided to call in Dr. Prévôst for consultation.

Feb. 22nd. Condition unchanged, two simple enemata of a quart each had no effect; patient vomited more or less all day, considerable tympanites.

In the evening I related the history to Dr. Prévôst, who then saw her. Temperature was 99° F., pulse 80 and fairly strong. She had not urinated all day, and per catheter about a quart of urine was drawn off.

Dr. Prévôst examined her, advised symptomatic treatment and Calomel, gr. x, at 11 P.M. He thought everything pointed to an extra-uterine pregnancy.

Feb. 23rd. Dr. Prévôst and I saw her at noon. She had passed a good night, vomiting had ceased and since early morning a bloody discharge had commenced to ooze out of the vagina. On removing the napkin we found there a most perfect and beautiful decidual cast of the uterine cavity, no ovum. Vaginal examination revealed an enlargement of the right tube apparently close to the right cornu, and which was very tender to touch. This practically settled the diagnosis.

A high rectal enema gave good results in the afternoon. The stomach became settled, so the diet was increased to include soups, broths, gruels and champagne. Hot dry flannels were still kept applied to the abdomen.

Feb. 24th. Patient comparatively well, tenderness in right side still persisted, slight bloody discharge, temperature slightly elevated (99°). Ordered douche of Perchloride of Mercury 1.2000, to be given night and morning.

Feb. 25th. Patient felt well, slight external tenderness. Vaginal examination almost painless, uterus only slightly tender, anteflexed and deflexed towards the left side. On the right side, at the upper part of the uterus, was a swelling which I could not separate from the uterus; it was very tender on bimanual examination and it seemed to move with the uterus. The pulse and temperature were normal.

Feb. 26th. Patient feeling well. Bowels moved after compound Jalap powder, gr. xx. She was moved to the 'Convalescent Home' for operation.

Feb. 27th. Patient etherised. Before the operation Dr. Prévôst made a vaginal examination and discovered a haematocele in Douglas' pouche. No evidence of this was apparent when I examined the patient on Feb. 25th, since which time she showed no signs of hæmorrhage.

Dr. Prévôst, performing the laparotomy, made a median incision which revealed the fœtal sac on the right side, adherent to adjacent parts. The tube had ruptured and several handfuls of coagulated blood were removed. The sac was partly adherent to the posterior surface of the uterus. A ligature was applied and the sac, ovary and tube removed entire. The ovary was perfectly healthy. When the sac was opened the amniotic fluid spurted up and a beautiful small fœtus, about an inch in length, was found floating inside attached by its little cord. The placental attachment was just over the site of the rupture in the tube.

All blood clots were carefully removed, the oozing controlled and the abdominal wound closed by three rows of sutures. The patient made an uninterrupted recovery, the stitches being removed on the ninth day, and on March 14th, she left the hospital to complete her convalescence at home.

The most interesting points in this case naturally centre in the diagnosis. Regarding the etiology of the condition, in general terms an extra-uterine fœtation is due to any condition which interferes with the free passage of the ovum into the uterine cavity, *i. e.*, an interference with the ciliary action of the mucosa of the tube and deficient peristalsis. Conditions which are responsible for this are: chronic salpingitis, constrictions, flexions and adhesions due to inflammatory changes within the tube as well as without, mucous polypi obstructing the passage and diverticula in the tube in which the ovum may become lodged.

In the present case we have a history of two miscarriages, a period of sterility of three years, and finally a profuse leucorrhœal discharge during the latter part of 1896, all pointing to a diseased condition of the endometrium which probably extended to the right tube as well.

The diagnosis in these cases briefly may be said to depend on (1) A history of probable pregnancy; (2) Sudden sharp paroxysmal pains on one or other side; (3) Irregular bloody discharge which may contain bits of decidual membrane; (4) A tumour mass situated to one side of or posterior to the uterus with concomitant enlargement of the uterus. Given a case in which one had a history of pregnancy, could detect tumour on one or other side, and knowing the uterine cavity to be free from any contained ovum, the problem would appear simple enough. In this case the diagnosis at first sight lay between (1) Appendicitis; (2) Acute Salpingitis; and (3) Threatened Abortion. Against appendicitis was the suddenness of the onset, the most tender point was below MacBurney's, bowels had been regular, no history of digestive disturbances and there was no inflammatory reaction to speak of. The principal point in favour of acute salpingitis was the location of the pain; against this however was the absence of any symptoms such as one would expect in an acute febrile condition, the pulse and temperature being practically normal, or but very slightly elevated; also there was no acute metritis of which a salpingitis is the common sequence, nor was there any sudden suppression of the menses which might give rise to the condition.

Regarding threatened abortion, the pain was too much localised on the right side, the characteristic pains we find in the back were wanting, and there was also the absence of any bloody discharge.

The vaginal examination removed all doubts regarding the possibility of appendicitis as the pain was intimately associated with some pathological condition of the adnexa of the right side.

Threatened abortion could also be pretty safely eliminated, there being no patency of the os, no discharge whatever, the uterus not being tender to any appreciable extent, and also there being no expulsive pains of any kind.

The principal symptom which to my mind was wanting to complete the diagnosis of extra-uterine fœtation was the presence of a sanguineous discharge.

Without the use of the sound it was impossible to tell whether the uterus contained an ovum or not, and as the uterus was enlarged and certainly had all the signs of the pregnant organ, I did not feel myself justified to use that instrument.

The two principal and only points on which the diagnosis rested in this case were: (1) The history of probable pregnancy; and (2) The paroxysmal pains, especially those of the evening of Feb. 21st, when the patient twice fainted. Thus far there was neither tumour nor discharge in evidence.

The expulsion of the decidual membrane however a few days later, clinched the diagnosis and subsequently one could detect, high up on the right side, the enlargement due to the fœtal sac.

Another point of interest here, is the amount of blood found in Douglas' pouch. The haematocele detected just before the operation was certainly not to be felt two days before. At no time did the patient show signs of acute hæmorrhage, such as shock, collapse, rapid and feeble pulse, clammy sweats, etc.; her pulse never went above 100, being always full and regular.

DOCTORS AND THE LAW.

BY

PEERS DAVIDSON, M.A.,

Of the Montreal Bar.

(Concluded.)

The decision was given upon the principle that the communication between individuals even though in good faith must be fair and impartial without exaggeration or the introduction of irrelevant or calumniatory matters. If then a physician is asked by a patient as to the status or the experience and skill of another physician in a special branch, he must be careful only to say what is necessary for the guidance of his patient in making a choice, and, if it be necessary to enter into details, to be reasonably certain that his information is correct.

CHAPTER IV.

THE DOCTOR'S CRIMINAL RESPONSIBILITY.

In relation to the Criminal Law the medical man undergoes some responsibility.

(*a*) *For Operations and Medical Treatment.*

The strictest guardian of the honour of the profession must admit that there are times when death ensues from medical or surgical treatment. It is inevitable that strength and vitality, and the physical effect of drugs and surgical operations are sometimes miscalculated and that as a consequence death results. On this point the text of the Criminal Code is clear. (Cr. Code Sec. 57). It reads as follows: " Every one is protected from criminal responsibility for performing " with reasonable care and skill any surgical operation upon any " person for his benefit, provided that performing the operation was " reasonable, having regard to the patient's state at the time, and to " all the circumstances of the case."

Section 212 is also applicable: " Every one who undertakes (Except " in case of necessity) to administer surgical or medical treatment, or " to do any other lawful act, the doing of which is or may be danger- " ous to life, is under a legal duty to have and to use reasonable " knowledge, skill and care in doing such act and is criminally respon- " sible, for omitting without lawful excuse, to discharge that duty if " death is caused by such omission."

The only charge within the range of possibility against the doctor under these sections of the law is " Manslaughter," *i. e.*, the killing of a human being without malice aforethought, or in other words, by reason of criminal ignorance, neglect or want of skill. Under the Criminal Code then there are three essentials to protect the physician :

1. Reasonable care.
2. Reasonable skill and knowledge.
3. A reasonable operation in view of the patient's state at the time, and all the circumstances of the case.

Notwithstanding the high character of the medical profession in this city and notwithstanding the improbabilities of an operation without the above requirements. it may at any time happen to a surgeon, that ignorance or spite on the part of a third party may be the cause of laying an information for manslaughter when the operation has resulted in death. It is therefore a wise principle to adopt in all cases of doubtful operations to call in a consultant and perform the operation with his approval. This precaution should be observed even by the leader of his profession.

(b) *The Doctor's Responsibility for Participation in or Concealment of Crime.*

As I above intimated, we find the professional secret in its relation to the Criminal Law as well. In this domain however, it is not so much a question of responsibility, for that can be guarded against, but one concerning the physician's conscience. I believe that there is no profession in the world that observes its obligations and its rules of etiquette with greater sincerity and severity than the medical profession. When therefore they are face to face with what they must feel to be a public obligation upon all men to assist in the detection of crime, they are in a position of extreme difficulty. The question arises more particularly in connection with abortion, poisoning and services to the criminal subsequently to his crime. In France the Criminal Code (Art. 30) requires that " Every person who may have " been a witness of an attempt against the public safety, whether " against life or property, should give notice of it to the public prose- " cutor." We have no such law.

The doctor is however impelled to give information respecting crime which has come to his notice during his professional work by two impulses comprised within two of the exceptions above given.

The first is : The impulse to free him from the danger of being held to be an aider and abettor of a crime or an accessory after the fact.

The second is the impulse to protect society from crime and to punish the criminal.

Under our law the distinctions between principals of the first and second degree, and between accessories before the fact are done away with ; and *all* are expressly made principals or parties to, and equally guilty of an offence who: (*a*) actually commit it ; (*b*) who do or omit anything to help its commission ; (*c*) who abet or assist at its commission, or (*d*) who counsel or procure its commission. (Crankshaw, Cr. Code, Sec. 61 and 62).

If therefore the physician is face to face with an attempted poisoning, or he has strong suspicions of such, but continues his treatment attempting to cope with its results, and does not seek to remove the cause, he will find himself placed in a dangerous position legally, and an uncomfortable position professionally.

The conclusions are much the same in cases of abortion. The gentlemen of the profession, of higher standing, whom I am now addressing, at times called in in consultation as a last resort, to save the unfortunate woman, do not consider the risk of the criminal law which they incur. They act in good faith and to save a fellow being, but at the grave risk of being technically considered a principal in the crime. They should remember always that they are guilty in the eyes of the law if they assist in the slightest degree, even from purely professional motives and that their failure to inform must raise the presumption of criminal intent.

" An accessory after the fact to an offence is one who receives, com-
" forts or assists any one who has been a party to such offence in
" order to enable him to escape, knowing him to have been a party
" thereto." (Cr. Code Sec. 63). They are not considered as principals and are tried separately.

One does not become accessory after the fact by merely neglecting to inform the authorities that a crime has been committed, or by forbearing to arrest the offender. (1 Hale, P. C., 618, 619). The test of an accessory after the fact seems to be that he renders the principal offender some active personal help to enable him to escape punishment, as, by furnishing him with money or food to support him in hiding, or by supplying him with a horse to enable him to fly from his pursuers, or a house or other shelter to conceal him in, or by using open force and violence to protect him. (1 Bishop, New Cr. L. Com. p. 422 : 4 Bl. Com. 38.)

It is therefore evident that a doctor runs no risk of a criminal charge by tending the wounds of a murderer, or receiving and tending him in ordinary course in a hospital, and yet remaining silent. Nor is he liable if he tends and heals a woman suffering from the effects of an abortion, *already completed*, nor again a would be suicide. He should, however, exercise great caution that he commits no overt act to protect or conceal the offender, nor defeat the attempts of the officers of justice to find him or her. When requested he should be careful to give them all information which can assist them.

I do not think that it comes within the scope of this paper to discuss the question, whether the doctor should give information respecting crimes and attempts at crimes, which he obtains in his professional capacity, when he is in no danger under the criminal law or as respects his professional reputation. That is not only a question of Medical Ethics, but also a question of morals. It does not come within the domain of a legal discussion. The medico-jurists discuss the question pro and con at great length and with great diversity of opinion. Some fine distinctions are made. For instance, Trebuchet in his " Jurisprudence de la Medicine," thinks that in cases of abortion the doctor should be silent if it be apparently a first offence, and if an honourable family would be ruined by the disclosure. But that if the crime be committed upon a woman of low character by persons who make a practice of it they should inform. On the other hand, Mr. Justice Hawkins in his charge in the Kitson vs. Playfair case, considered it a " monstrous" thing to inform in either case, of course provided the doctor personally ran no risk by his silence. In this matter, however, doctors must take into serious consideration how far they render this crime the more prevalent and easy of accomplishment by their silence.

The same remark applies to the case in which they possess most valuable information for the authorities when striving to discover the perpetrator of a dastardly crime. The authors are rightly at one in considering it a paramount duty of the medical man, transcending all others, to inform when by doing so he is able to save the life of a fellow being.

In all these cases a doctor incurs no liability for damages. He should first be certain of his facts and reasonable in his suspicions and act in good faith and without malice. There is, under no circumstance, necessity to lay a public information in the Police Court. A confidential and private conversation with either of the Police Magistrates is sufficient. The doctor has fulfilled his duty to the public and to society in every respect by throwing upon them the responsibility of further investigation and a criminal prosecution. In the latter he appears simply as an ordinary witness under order of the Court.

There is no more noble profession than the practice of medicine. To heal the sick is a divine mission. Medical men, the world over, are famous for their charity, high ideals and great earnestness of purpose to benefit the human race. But they have at times to look beyond the immediate circle of their efforts and realise that they are at the same time simple members of that great complex whole—Society, which demands for its existence, the assistance of one and all of us.

ALBINISM.[1]

BY

W. H. DALPÉ, B.A., MONTREAL.

Definition.—Albinism is usually defined as a hereditary condition marked by a complete absence of pigment in the iris, skin and hair. However correct this statement is, a long residence with albinos in this Province and in New England, has led me to associate with this condition certain functional and organic alterations in the skin and appendages, and about which I will have to say a few words.

Albino means white and was a term used by the Portuguese to designate the white negroes whom they met on the Western Coast of Africa; by extension it is used to designate any pigmentless individual.

Occurrence.—Albinism is an affection of a world-wide distribution and not limited to the dark races as was surmised. In the Medical Literature, of Europe and America, several accounts have been given, none better or more tersely written than that found in Morrow's Handbook of skin diseases, by one of our best dermatologists.

This affection is not peculiar to man but similar conditions are found to exist among the animals, birds and even insects.

CHARACTERISTICS.

Eyes.—The irides are usually perfectly pigmentless. In many, these transparent perforated screens take on a pinkish or reddish hue from the capillaries of the fundus. Balmanno Squire reported a case, which he calls atypical and in whom the irides were dark blue, *Lancet*, Feb. 1895. Zeimssen recognising that such blue irides do occur, claims this is due to some phenomenon of interference of light. They have appeared to me, on more than one occasion, very much chameleon-like, the most constant colours being the white and the pink.

Consequent upon this pigmentless condition of the irides, the camera obscura of the eye is changed to a camera lucida, and the image falling on the retina, being more diffuse, loses proportionately of its clearness.

Again as the sensitive eye-plates of the retina are ill-protected, nystagmus,[2] photophobia,[3] coloboma, (Wm. Geo. Sym, Edin.), and oscillatory movements of the eyes may be induced (A. J. Balmanno

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[1] Prize Essay McGill Medical Society, 1897.

[2] "Nystagmus" and "oscillatory movements" though in some respects analogous, are not necessarily identical.

[3] Usually congenital, and hence it may be doubted that non-pigmented irides hold any causative relations to it.

Squire.) But it must not be inferred that all albinos will evince what Prof. Shepherd happily terms "the screwing of the eyelids" under a strong light; neither are they all weak-eyed; Squire's case could read perfectly in daylight and in the numerous cases which it was my good fortune to see. although their vision was keener at night, yet by daylight they saw perfectly well, neither did I see any resort to the wearing of glasses. (*Ab albinismi causa.*)

Hair.—The hair is possessed of a greater or less degree of whiteness, at times immaculate, at times flaxen, whitish yellow, always exceedingly fine and of a silky lustre, sparse, leaving the brow and nucha well denuded and apt to leave the corona bald in men.

This condition especially in women, often, if not always, demands the wearing of false hair. In children their hoary denuded head in the presence of the other conditions makes a picture most sad to behold.

Beards were not to be seen among the men in my cases, yet some would see fit to encourage the tonsorial artists, at long intervals, by requesting the removal of what seemed to me more like down than beard. What this would come to, if left unmolested, I am unable to say, other than it must of necessity be a caricature of the genuine article.

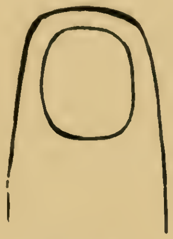
In the axillæ and over the pubes, the growth of hair was seen to be more vigorous, and the hair yellowish-white, curly, more brittle—a condition which was no doubt due to the hyperidrosis of the part.

The Skin is also devoid of pigment, but it may acquire a rosy colour from the underlying vessels, in places where the integument is thin as over the cheeks and the dorsum of the hands. This gives the albinos a pale, sallow, sickly appearance; extreme anæmia may appear to exist.

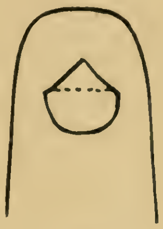
The skin is soft to the touch, dry, in some places very thin. Yet in the portions of the body subjected to pressure as the surface of the hands or the soles of the feet the skin was granular, rough, full of rugae not only in working people but in individuals not inured to hard labour and in whom, presumably, this condition could not be due to this cause.

In the normal, the pigment occurs between the cuticle and the cutis vera; here seemingly an epiblastic derivative has one of its functions absent, whilst in the eye some mesodermic derivative is at fault.

The Nails. I am now going to speak of a condition which was found to exist concurrently with those already named, in a great number of cases. I refer to a particular conformation of the nails; this was so characteristic, so general in the cases that came under my notice, that a diagnosis might easily have been made by a single exhibition of the finger tips. The nail-base or matrix does not reach to the end of the finger; is only about half as long as in other people, and is made up of a semi-circle directed upwards, and a triangle looking down towards the finger tips. In the normal the nail matrix is more circular or oval.



Normal.



Albino.

Moreover the tip of the matrix was raised and the nail given an arched direction so that on a longitudinal section it would look very much like a claw (onychogryphosis) a resemblance which was very much increased by a pathological overgrowth or hyperonychia, rendering them clumsy, thick, brittle, useless for scratching or opening a knife-blade Albinos. in whom this condition of the nails is found usually either hide them in other people's presence, or, to improve their appearance, trim them very short, close to the stumpy base or matrix.

Why such a condition should occur concurrently with albinism, I am not ia a measure to explain. The points which especially struck me were the congenital nature of this gryphotic condition; its frequent if not absolute association with the pigmentless condition; the involvement of all the nails at the same time. The condition which most resembles that just referred to, is probably onychomycosis due to a fungus or a somewhat similar one due to tinea favosa or trichophyton tonsurans. Here the nails are brittle, frayed out, intersected by furrows, opaque, grayish or yellowish-white, and are lifted up and gryphotic, disfigured; the matrix being implicated, changes of growth are also present and the matrix may be painful, swollen, suppurative, (Zeimssen). This author also includes as possible etiological factors, scrofulosis, cachexia, oligæmia, and Billroth also mentions moist gangrene. Again in scleroderma, sclerodactylism may simulate onychogryphosis. But in all these changes there would be a lack of conformity to the same type, an irregularity in distribution, a history of infection or a progressive condition, in some suppuration, in others extreme deformity of the finger tips. Moreover these would not be congenital as was that condition which I observed in my albinos.

The *teeth* were also found to be hypoplastic or stunted in a variable but always in a marked degree ; they were squarish, and stood apart ; this gave my albinos the appearance of old people, the mouth receding with its stunted teeth, standing in marked contrast to the prominent chin and nose.

Here there was no gouging of the middle incisors as is apt to occur in congenital lues, nor was there any other evidence of this virus in the system ; however, in one family I was given to understand that a leutic taint existed. Their teeth did not seem to tend to early decay.

Bromidrosis. A fetid perspiration has long been recognised in some pathological conditions ; thus scrofula, rheumatism, lues, the parturient state have all been associated with a particular emanation. However in some it cannot be connected with any morbid conditions. In such albinos and sons of albinos with whom I played, walked, slept, a peculiar, penetrating, not absolutely unpleasant odour was at once perceptible, which forced ablutions could only dispel for a limited time. Moreover, it was asserted to me that this was increased in females at the menstrual period, but whether it was complementary or vicarious my informers were unable to state. *Excepi cum grano salis.* Zeimssen says the functions of the skin are normal.

The albinos barring these physical differences do not seem to be an inferior class of people. The authors usually say they are of a weakly constitution, but Zeimssen says this is a rule with manifold exceptions. I have always been of opinion that this was more apparent than real. The general cachectic appearance might easily be attributed to the general pigmentless condition of the skin and hair, the weak eyes and receding mouth. Many, I have found, to be surprisingly agile and strong. Several severe shakings which I got at school, by an albino, the seventeenth child of an albino mother, have forcibly convinced me that albinos are not physical degenerates. This particular boy, conscious of his own strength and endurance, was wont to afford us evidences of them by lifting steel rails and by running to a pump, a distance of 150 yards, in cold stormy mid-winter nights, bareheaded, barefooted, and with only thin underwear on, and there to fill his pitcher and to bring it back full. Nor was he ever sick as a consequence. Neither was he intellectually deficient, but he now wears a clerical dress, with at least, much decorum and success.

In a family of which four generations have come under my observation, the representative of the first was a man of unusually ready wit; his son, though only five feet three inches in height, was a wiry little personality; in the third generation were observed four professional men and a fifth an albino, a sculptor.

Of course the albinos ordinarily are not all physically and intellectually the par of those just referred to. My albinos were for the most part long-lived, not phthisical; I have not yet come across a case of idiocy amongst them.

They are generally discriminated against when it is a question of giving or taking in marriage, and they, as a class, feel that a stigma attaches to them, whereby they are often rendered abashed, morose, melancholic. This has been noted by most authors. Menfolks usually marry others than albinos, but the women usually do not marry at all, probably for want of suitors, unless there be a large dowry in sight. Thus the increase amongst the albinos is not a very rapid one.

The sexual propensities are very highly developed in some if not in most and have been noted in the non-albino progeny of mixed unions. *Sed hoc non semper albinum est.*

Etiology.—Heredity is recognised as the most important factor in the causation of the disease. Thus some parents, immediate or remote are looked upon as the channel of transmission; the atavism may be so great that the cases may appear sporadic. Case of Balmanno Squire, the *Lancet*, Feb., 1895. The cases of Geo. Wm. Sym, Edin.

The children of an union between an albino and a normal individual are for the most part normal; rarely do we see the majority of them pigmentless. A child having a full development of hair may yet have a stunted growth of teeth or may even have a partial onychogryphosis, or again these may disappear from one generation and reappear in some members of the next to tell its tale of a lurking albinism.

As a second possible etiological factor some include some telluric conditions. Thus it is claimed that it occurs endemically in Loango or Lower Guinea. However, such telluric causation is usually not admitted. Beyond this we enter the realm of hypothesis. Are we to look for a cause within the part affected or to some anomaly in the ductless glands? No answer is at present forthcoming.

Classification.—Bärensprung classified pigment atrophies into *acquired* albinism or vitiligo, and *congenital* albinism which he further sub-divided into universalis and partialis. The first and the last he misused, using the one for morphea and *sclérodermie en plaques*, the other for vitiligo. (Zeimssen.)

Vitiligo or leucopatia acquisita is a progressive pigment atrophy, which is regardless of sex, appears usually between the tenth and thirtieth year, may remain stationary or extend over the whole body or may even disappear spontaneously. It may run a symmetrical course on both sides of the body. The skin around these white spots usually becomes more pigmented. Näcke Lévy. It is often seen in cases of acquired syphilis. When it involves the scalp, canities result. *Berliner Klinische*, Feb., 1894. In the course of the diseases of the thyroid leucopatia acquisita may occur and by the total involvement of the skin may even simulate albinismus universalis. In Graves' disease, however, there would be tachycardia, an enlarged thyroid, venous pulsation, muscular tremors, and characteristic eye-changes.

In scleroderma either in the localised or the diffuse form, following hyperæmia and preceding induration, leucoderma often appears and often with it dystrophy and sclerodactylism. Here, given a very chronic case, symmetrically distributed gryphotic albinism might be very closely simulated. But in scleroderma, sensibility and secretion are lessened, there is bradycardia, and intellection is lowered.

In some cases of albinismus acquisitus partialis, the area of pigment atrophy may correspond to the area of supply of some nerve. From clinical notes I obtained two remarkable cases, one with a pigmentless spot corresponding to the hypogastric branch of the ilio-hypogastric, another with a white spot corresponding to the distribution of the subcutaneous *colli medius et inferiori* I might also say that a somewhat similar auto-observation was made by myself several years ago.

Of congenital partial albinism, I need not say much. The colour merges gradually from the pigmentless spot into that of the healthy surrounding skin which is not more pigmented than elsewhere. In some canities may occur without a lack of pigment in the scalp. Stricker refers to a white lock of hair transmitted for six generations.

A pseudo-albinismus universalis congenitalis, I think, may be rightly said to occur. I am very much inclined to look upon Sym's four cases as such. The hair was extremely fair but not quite white; the irides of an exceedingly pale blue colour, not pink. It is not an uncommon thing to find individuals with very pale yellow or flaxen hair, eyebrows and ciliæ, and with almost pigmentless skin and irides, so that one almost feels as if they should be classed in a sub-variety of albinism. These pseudo-albinos would be characterised by the fact that the lack of pigmentation is not so marked nor so persistent, by the gradual deepening in colour noticed in the hair as age advances by the appearing of freckles; here again beards will often grow, though not always; nor will there be usually gryphotic changes in the nails, nor hypoplasia of the teeth. Yet here, as in many other things, fast and hard rules are only good enough to be broken.

Ephemerides, 1897.

By William Osler, M.D.

XIX.—Vertigo and Ocular Defects.

The association of vertigo and ocular defects has long been recognised. The occurrence, too, of ocular symptoms in the severer types of labyrinthine vertigo is also well known. The most satisfactory account in any of the standard works is that by Gowers. "Ocular symptoms, secondary in origin, are present in some instances. In cases of ear disease, an increase of pressure within the ear, as by pressing firmly the antitragus over the opening of the meatus, may cause nystagmus. During paroxysms of vertigo the patient may be conscious of a jerky movement of objects, a quick motion in one direction and slow return, like that sometimes produced by nystagmus, and I have known it to correspond with intermitting tinnitus. This apparent movement may sometimes alone be caused by pressure on the meatus; and nystagmus may be produced, with vertigo, by disease of the middle ear, of course through the secondary affection of the labyrinth. It has been known to persist after the ear disease was cured, even for ten years. I have several times known double vision to occur during or after a paroxysm: in one case of pure aural vertigo, each attack was followed by double vision, jerky movement of objects, and distinct erroneous projection in the direction of the movement, so that, if the patient attempted to touch an object, the hand went too far in that direction. Slight diplopia is sometimes due to nystagmus that is not quite equal in the two eyes. It is apt to cause an error in diagnosis."

Gowers does not refer to the association of refraction errors with vertigo, nor under the section on treatment he does not suggest that they should be sought for.

Recent literature contains several cases in which dizziness and vertigo have been completely relieved by glasses. So far as I can learn, however, none of the cases were of such severity as to come in the category of Menière's disease. In the following case the vertigo, which was of the most intense character, and had persisted for eighteen months, was completely relieved by properly adjusted glasses.

Mr. H., aged 54, consulted me on the 4th of April, 1894, complaining of vertigo, and stomach trouble. He has been a healthy man with the exception of attacks of biliary colic.

The patient is a brick-maker by occupation. His habits have been good. He has been a steady smoker until about a month ago.

For about eighteen months he has had attacks of severe vertigo associated with flatulency. The first one occurred while he was sitting at the table in a restaurant drinking claret-punch. He jumped up and said to his wife, "Catch me, catch me," and had to get hold of the table to steady himself. He had a sensation as if a cannon-ball had burst in his head, and as if everything was in motion. The attack lasted about an hour. He did not vomit, but looked pale, and broke into a profuse perspiration. He has had only two attacks of similar severity, one while in his carriage. He said it seemed as if the horse was down and everything was turning over. This attack lasted about an hour. He had to go to bed and felt very badly, and after it he felt confused in his head.

The milder attacks have occurred with great frequency. Scarcely a day passes without one or two; thus, yesterday after breakfast his stomach felt badly and he had a good deal of belching. Then, as he expresses it, his head went off at once, and he generally cries to his wife, "Come and catch me." Coming home just before dinner he had another spell. When they are at all severe he gets pale and cool, and perspiration rolls off his face in beads. He belches all the time during an attack, and on some days he belches continually. He had no pain whatever in the chest or elsewhere. The attacks do not come on during sleep, but he has had several of them while in bed.

From his statement the vertigo apparently is both subjective and objective. Objects go to the right, but he feels that he turns also. In the attacks it is impossible for him to walk. It appears to him that one foot goes about ten feet higher than the other. If the head is held tight the attacks do not appear to be so severe. He has never lost consciousness, though he sometimes feels faint. There is no throbbing at the heart. The longest interval he has ever passed without an attack is two weeks.

He lays the greatest stress upon the condition of the stomach, and says that everything comes from it, and that the belching is incessant and most distressing.

Though he did not complain of difficult hearing, it was evident that he was a little deaf, and on questioning him he stated that deafness had been coming on for several years past, particularly in the right ear, in which there is a ringing noise almost constantly. In the spells it is much louder, and sometimes there is the explosive burst already spoken of. He thinks he is never without the noise in the ear.

Dr. Theobald, to whom I referred the patient for examination of the ears, wrote that there was deafness in the right ear, due to changes in the auditory nerve or its expansion in the labyrinth, and that there was also slight deafness in the left ear. The examination of the eyes showed a rather high grade of hypermetropia, with a decided amount of astigmatism, which he thought would be materially benefited by glasses, as the error of refraction was possibly an important factor in causing the attacks: the condition of the ears was such that it was reasonable to suppose that they also might have something to do with it. The change in the patient from the use of the properly adjusted glasses was most remarkable. He came to see me again towards the end of May, and said that he was living a new life; that not only had he had no severe attack, but that the milder attacks had disappeared completely. His stomach still troubled him, but he said was not nearly so bad as it had been.

Towards the end of June the patient began to have attacks of severe vomiting, and died within two weeks of the most aggravated, incontrollable attacks due, as was shown post-mortem, to an acutely developing malignant disease of the stomach.

From the date of the adjustment of the glasses by Dr. Theobald about the 10th of April, until the 22nd of June, when he took to his bed, he had been very actively at work, had gone about alone, and been able to drive himself, which he had not done for more than a year and a-half; with the exception of the dyspepsia he had been as he expressed it, in first class health.

The central connections of the space nerve or vestibular branch of the auditory offer an explanation of the oculo-motor phenomena in labyrinthine vertigo. Bonnier[1] has discussed the question from various standpoints. Of the three nuclei of the vestibular nerve, two, the internal and the nucleus of Deiters, send fibres directly to the nucleus of the sixth nerve on the same side. A second less direct association is through the superior olive, which receives branches from the same centres and has connection also with the sixth nucleus. A third association is with the third and fourth nerves through the direct and crossed connections which exist between their nuclei and those of the sixth pair.

After referring to well known facts bearing upon the experimental production in animals of nystagmus and strabismus, Bonnier reports several cases of great interest, in one of which disturbance of accommodation followed auditory irritation. In a patient with a plug of wax in the meatus and transient deafness, the irrigations drove the plug against the drum. There had never been vertigo, only slight deafness and roaring. Following the injection the accommodation was paralysed in the affected side, and continued so for several hours. On the following day a second injection caused the same symptoms.

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[1] *Revue Neurologique*, Dec. 15th, 1895.

A condition of irritation and instability of the space-nerve centres may possibly be kept up by serious accommodation errors. Physiological, clinical and well established anatomical data, show the association between the labyrinth and the oculo-motor mechanism. The case which I here report bears on a practical aspect of the question, inasmuch as the patient obtained complete relief from a vertigo of the most intense and persistent character by the use of carefully adjusted glasses.

RETROSPECT

OF

CURRENT LITERATURE.

Surgery.

UNDER THE CHARGE OF GEORGE E. ARMSTRONG.

Cancer of the Rectum.

QUÉNU. "Étude clinique sur le cancer du rectum."—*Revue de Chirurgie*, 10 Janvier, 1897.

Dr. Quénu gives in this paper the results of some very close study of the onset of cancer of the rectum. Nothing is clinically more obscure than the onset of malignant disease in this region. The disease has often made great progress before any alarming symptoms are developed. The evolution to a certain point, of an epithelioma of the rectum is compatible with an appearance of health. Pain may be absent or only a vague sensation of weight about the sacrum, such as many people suffering from constipation complain of. Among the early symptoms which should arrest the attention of the surgeon and lead to further enquires, may be mentioned : At the outset—In a certain number hæmorrhage is the first manifestation noticed ; in others abnormal sensations or a failure of the general health.

Hæmorrhage may occur suddenly and in considerable quantity after a stool. Four cases, giving this history, are mentioned. The first hæmorrhage in one instance was said to be half a glassful ; in another, three hæmorrhages in one day, aggregated over a litre, and in other cases it is said to have been very abundant.

The occurrence of these large initial hæmorrhages is difficult to explain ; it would be expected to occur during a period of ulceration : perhaps it may be due to venous obstruction and engorgement, or to secondary hemorrhoids which often accompany or follow rectal neoplasms.

More frequently the hæmorrhage observed at the commencement is not abundant, but appears as a few drops, accompanying defecation. The fæces are, as it were, enveloped in a little blood.

The blood is generally red, but if taking place slowly may lie for some time in the rectum and become black or like coffee ; or it may appear in bloody mucus or in streaks.

Abnormal sensations during the early period vary as to their seat, character and intensity. At times they consist of vague abdominal pains, a sort of colic, and at times they appear to be more localised in the region of the disease.

Some patients suffer only during the expulsion of fæces or directly afterwards. Probably the greater number of patients complain of a weight in the region of the sacrum and coccyx, and they have a frequent desire to go to stool, and pass only a little gas and mucus.

Exceptionally, diarrhœa opens the scene. Patients are often misleading on this point. Loose stools following an interval of two, three or four days of complete constipation are not infrequent ; again patients sometimes imagine that they are the subjects of diarrhœa because, when yielding to an almost continuous desire to defecate, they pass some gas, or mucus and slime, a sort of false diarrhœa.

These symptoms occurring in a patient over 45 years of age, especially in a patient losing weight, strength and colour should be very thoroughly investigated. We may fail to discover new symptoms, but we can carefully study old symptoms, their modifications, variations and groupings, and thus become able in an increasingly large number of cases to make a diagnosis early when the disease is removable.

Ambulatory Treatment of Fractures.

" The ambulant treatment of fracture of the lower extremity." An editorial article.—*Annals of Surgery*, February, 1895.

PILCHER. " Ambulatory treatment of fracture."—*Transactions of the American Surgical Association*, Vol. XIV., pp. 239.

With the introduction of the plaster bandage into surgical practice there came to the patient with a broken leg the pricelees boon of being able to be up and about on crutches, instead of lying through the weary period of a month or more anchored to some mechanical contrivance. It must be admitted that untoward results do sometimes occur, particularly in the hands of those who do not treat many fractures, and who are not familiar with the use of plaster of Paris. Notwithstanding its drawbacks, the use of plaster has become more general and advances are being made in the direction of securing to the patient even greater liberty

By the ambulatory treatment of fracture of the lower extremity is meant the application of the plaster in such a way, aided in some cases by splints of iron or wood, that the patient can walk about with the aid, in some instances, of a crutch or stick, but often two legs after the first few days. As a result of his experience in the ambulatory treatment of fracture of the leg, the late Professor Bardeleben stated that he found the following positive advantages, both of a local and general nature. The time required for the consolidation of the fracture is shortened ; muscular atrophy and joint-stiffening is prevented ; in the aged, the dangers of hypostatic pneumonia are avoided, and in alcoholic subjects the tendency to delirium tremens is lessened.

In 1891, F. Krause published a paper upon the treatment of fractures of the bones of the leg in walking patients. Some two years later Korsch published a paper upon the same subject, including fractures of the thigh and compound fractures. At about the same time Bruno, of Tübingen, published his paper upon the ambulant treatment of fractures of the leg and thigh, his invention consisting of a splint of metallic rods and leather straps, by means of which the whole leg was suspended, the weight of the body being borne largely by the tuber ischii and perineum. In the later part of the year 1893, Dollinger of Buda Pesth, appeared with a description of a movable splint for the ambulant treatment of fractures of the bones of the leg, reporting three cases upon which he had employed his method.

The idea of the method employed by Warbasse was, he states, obtained from Dollinger's paper. He practised it upon six cases, in the practice of Dr. L. S. Pilcher, in the Methodist Episcopal Hospital in Brooklyn. The method, as he practised it, consists, first, in the reduction of the fracture and cleansing of the skin of the leg with soap and water. The foot is fixed at a right angle to the leg, and a flannel bandage, smoothly and evenly applied from the toes to just above the knee. This bandage is made to include beneath the sole of the foot a padding of ten or fifteen layers of cotton wadding, making a pad about three-fourths of an inch thick when it is compressed by the moderate pressure of a flannel bandage. Over this is now applied a plaster bandage from the base of the toes to just above the knee, especial care being taken that the bandage is applied smoothly and somewhat more firmly than is the custom in the ordinary plaster cast. The layers of the bandage should be well rubbed as it is applied, with a view of obtaining the greatest amount of firmness with the smallest amount of material. The sole is strengthened by incorporating in with the circular turns an extra thickness composed of ten or twelve layers of bandages well rubbed in together and extending longitudinally along the sole of the foot. The bandage is applied especially firmly about the enlarged upper end of the tibia, and here it is made somewhat thicker. As it dries, it may be pressed in so as to conform more closely to the leg just below the heads of the tibia and fibula. The assistant who stands at the foot of the table and supports the leg makes such traction or pressure as is required to keep the fragments in proper position whilst the plaster is being applied. The operation requires about twenty minutes, and by the time the last bandage is applied the cast should be fairly hard.

It is seen that when this cast has become hardened the leg is suspended. When the patient steps upon the sole of the plaster cast, the thickness of the cotton beneath the foot separates the sole of the foot so far from the sole of the cast, that the foot hangs suspended in its plaster shoe. Thus the weight of the body, which would come upon the foot, is supported by the diverging surfaces of the leg above the ankle. The chief of these is the strong head of the tibia.

The immediate application of such a splint prevents subsequent swelling, because the swelling which follows a fracture is largely due to the movements of the ends of the fragments and the sooner perfect immobilisation is effected, the less will be the swelling. Examples of this fact are seen in fractures of the skull and pelvis.

The originator of the idea was Scutin, though his dressing did not permit the patient to walk upon the broken leg.

Husing was the first to really accomplish the practical application of a dressing in which the patient could stand upon the broken leg.

The idea has been extended in its application until now fracture of the thigh and even fracture of the neck of the femur are treated on this principle. The Americans are suggesting the use of Thomas' knee and Thomas' hip splint to give increased stability, and the use of a high shoe on the foot of the sound leg.

The time after the injury when it may be proper to apply the ambulatory dressing will depend upon the nature and extent of the damage to the soft parts and the amount of local reaction following the injury.

In compound fractures it may be applied as soon as time enough has elapsed to show that the primary cares have been successful in warding off infection, that is, within a week or ten days.

The use of this dressing requires considerable familiarity with the use of plaster, and its application outside of hospitals is of doubtful expediency. *Geo. E. Armstrong.*

Gynaecology.

Malpositions of the Uterus.

CROCKETT, M. A. "Etiology and Pathology of Uterine Displacements."—*Buffalo Medical Journal*, April, 1897.

FISHER, J. M. "Practical Observations on the Classification, Etiology and Pathology of Posterior Displacements of the Uterus."—*Medical News*, April 24th, 1897.

SYMONDS, H. P. "Notes on One Year's Surgical Work."—*Lancet* April 7th, 1897.

The anterior vaginal wall and the utero-sacral ligaments form an elastic beam across the pelvis upon which the uterus is suspended, and this beam is partially supported by the posterior vaginal wall, the two walls being in apposition. Unless there is excessive strain or force applied from above, this beam is quite able to support the normal uterus, even when unaided by any other structure.

Of all the uterine ligaments, the utero-sacral are the only ones which are constantly taut, these being chiefly instrumental in the uterus normally retaining its position of slight ante-flexion. The broad and round ligaments are, on the other hand, usually relaxed, when the fundus is lying forwards. This fact allows of the free mobility of the uterus and therefore of this latter organ really having several normal positions, according to the position of the patient and the condition of the bladder or rectum. For this reason, any operation which fixes the uterus in one definite position is faulty.

The axis of the superior strait of the pelvis is the physiological area of uterine movement and is consequently of importance in labour. The uterus is displaced, when it takes up a permanent position outside of this physiological area, and the development of symptoms depends upon the power of resistance of the organism. (This is no doubt true, as is evidenced by the fact that an extensive displacement of the uterus may often be found in one patient who suffers no incónvenience from it while in another individual a slight misplacement will cause severe symptoms which entirely disappear upon the cure of the pelvic condition.)

For the normal working of the mechanism of the uterine support two conditions are requisite, viz., normal tissue and normal forces. It will be seen from this, that two classes of causes give rise to uterine displacements, viz., all conditions impairing the integrity or tonicity of the uterine supports and all abnormalities in the amount and direction of the forces acting on the uterus, both classes of causes acting together in some cases. In regard to treatment, "the best gynæcologist is the one who knows when to leave the pelvic organs alone and turn his attention to the body at large" as in many cases the circulatory, nervous and nutritive organs are chiefly at fault.

Fisher agrees, in the main, with the above as he considers that a uterine retro-displacement caused by a full bladder and which does not become fixed, as physiological, because it returns to the front as the bladder is emptied. On the other hand, a permanent displacement is abnormal but not necessarily pathological. That is to say that, while anterior and posterior displacements of the uterus are abnormalities in themselves anatomically speaking, they frequently fail to constitute disease clinically.

A proper classification of retro-displacements of the uterus becomes at once an index to both diagnosis and treatment. They may be classified as:

(*a*) *Anatomical,* including retro-positions, retro-versions, retro-flexions, retro-versioflexions with anteversion.

(*b*) *Etiological,* as congenital, puerile (originating about puberty) and acquired.

(*c*) *Clinical,* such as pathologic, complicating and indifferent. The pathologic and complicating forms may be benefited by treatment, while the indifferent, being a retro-displacement causing no symptoms, should be left alone.

He says that the majority of these retro-displacements are caused by faulty obstetrics and improper care during the puerperium, and, where this is the case, the uterus should be replaced before the ligaments have ceased to undergo involution.

A new operation for the cure of prolapsed or retro-posed uteri has been devised by Mr. Symonds, who describes it and relates a case as follows:

The patient was forty-seven years of age and had suffered from prolapsus uteri for three years, pessaries being of no service to her whatever. The abdomen was opened in the median line as for an ovariotomy. Both ovaries, together with one inch of each broad ligament, were removed. A transverse incision was made through each rectus and the stumps of the broad ligaments drawn through the incisions and sutured there, after which the abdomen was closed. The patient made an excellent recovery and has had no return of the disease.

(This operation presents no advantage over ventro-fixation. In both, the abdomen requires to be opened and in Symonds' operation the ovaries require to be removed, which adds to the risk of the operation and, of course absolutely contra-indicates it in a woman who has not yet reached the climacteric, unless the ovaries are diseased. The chief argument urged against ventro-fixation is that it interferes with pregnancy, but this cannot be advanced in this case, as Symonds removed both ovaries so that pregnancy would not follow his operation. It would not only be interfered with, it would be absolutely prohibited. Even when pregnancy does follow ventro-fixation, no trouble will follow if the operator has not passed the sutures too far down on the posterior surface of the uterus and so caused an exaggerated anteversion. If the sutures are passed just posterior to the tip of the fundus and a sufficient distance up from the pubic bone to lift the organ off the bladder the results will probably be quite satisfactory .

Psychological Effect of Pelvic Disease in the Female.

MITCHELL, S. WEIR. "Relations of Nervous Disorders in Women to Pelvic Disease."—*University Med. Mag.*, March, 1897.

MILLS, C. K. "Relations of Nervous Disorders in Women to Pelvic Disease."—*University Med. Mag.*, March, 1897.

SINKLER, WHARTON. "Relations of Nervous Disorders in Women to Pelvic Disease."—*University Med. Mag.*, March, 1897.

HOBBS A. T. "Résumé of the Gynaecological Work done at the London Asylum."—*American Journal of Obstetrics*, No. 3, 1897.

In epilepsy, the attacks are more likely to occur at or near the menstrual period than between them and may only occur at that time, so that some authorities look upon the act of menstruation as the cause and so endeavour to remove the source of irritation by bringing on a premature menopause through removal of the ovaries, but Dr. Mitchell does not agree with this teaching. He says that many ovaries both abnormal and normal have been removed for the cure of this condition, but he never saw a permanent cure result from this operation and so never sanctions it. Relief may possibly follow at first, but it is only temporary.

Insanity, in which the menstrual period is the originative and sometimes sole determinative cause of the mental condition, sometimes occurs in the female. Some remove the ovaries from these women in order to produce a premature climacteric, in hopes that this will stop the nerve irritation, but this is not good treatment. as it is well known that women at the climacteric are especially liable to mental derangement. However, some women are peculiarly liable to a mild form of melancholia at the menstrual period and it may even assume a suicidal form. It may possibly be of service to operate upon these but the cases should be very carefully chosen.

Many aggravated cases of hysteria are accompanied by disease of the pelvic viscera in the female, this fact suggesting the removal of the diseased structures, but the large majority of these patients are not cured by the operation, as, if the pain leaves the pelvis, it is almost certain to appear in some other region.

He concluded by saying that "epilepsy truly depending upon normal uterine function or due to abnormal states of the sexual apparatus is rarely (I am tempted to say never) seen. In all my life I have met with but four reflex epileptics; none were from uterine, or ovarian, or tubal disease." He also considers that insanity may be aggravated, but is very rarely caused by the menstrual epoch alone.

In the discussion which followed the above paper, Dr. C. K. Mills said that pelvic disease or disturbance was sometimes the result of mental or nervous disorders, as where amenorrhœa accompanied melancholia or other insanity. Real epilepsy, hysteria or melancholia is never caused by pelvic disease; they are essentially affections of the nervous system but pelvic disease may serve as the exciting cause in those who are predisposed to them.

In hysterical patients, where local pelvic disease exists, operation or treatment may relieve the condition.

Dr. Wharton Sinkler puts in a good word for the much abused gynæcologist. He says that when a woman is affected with some nervous disorder, her friends at once think that she must have some pelvic disease and forthwith conduct her to a gynæcologist, but these specialists now usually refuse to treat these cases.

Krämer collected the reports of 300 cases of pelvic operations for neuroses and psychoses, with the results that benefit followed in 200, while the remainder were either no better or else had their previous condition aggravated.

Hobbs, of London, Ont., has written a most interesting paper upon gynæcological operations upon the insane. He says that distubances of the functional integrity of the nerve centres are often caused by disease in distant organs, either reflexly or sympathetically, and that derangements of the highly complex cycle of organs connected with reproduction in the female, exercise more or less influence upon her mental stability, as is evidenced by the neurotic changes which appear at puberty, pregnancy and the climacteric. Therefore a woman's sexual apparatus should be in a normal condition in order to insure her bodily and mental health. Careful inquiry into absence or presence of symptoms of pelvic disease should be made in every case of insanity among women, and, if such are complained of, she should be examined and treated if necessary. His operations were undertaken with the view of securing physical health and future comfort of the patients, and not with the object of curing the mental condition, yet in many cases they were followed by mental improvement and even recovery. Curettage and divulsion alone were done upon nine cases, followed by physical gain in all and mental recovery in six, but none in the other three. The cervix was either amputated or repaired in twenty-three patients, with nine recoveries and seven women improved. Perineorraphy, as the main operation, was performed on three patients, but no recoveries followed. Eight patients had complete hysterectomy performed on them for fibroid, epithelioma, etc. Two recovered mentally, one improved, two remained in *statu quo* and three died. Alexander's operation aud ventro-fixation were employed nine times. There were two mental recoveries, three improved very much and the rest remained as before. In two cases, ventro-fixation, plus removal of diseased adnexa, was followed by one mental recovery. The removal of diseased adnexa was the only operation performed upon six patients, with the result that three recovered their reason, two were greatly improved and one very old patient died from pneumonia two weeks after the removal of a large cyst. Out of the total of sixty-one patients operated on, there were twenty-three who recovered their mental equilibrium, fourteen were greatly benefited, in nineteen there was no improvement, and five patients died.

Closure of the Abdominal Wound.

NOBLE, C. P. "A new method of suturing the abdominal wall in celiotomy."—*Am. Jour. of Obstetrics*, April, 1897.

The steps of the operation practised by Dr. Noble are : 1st. Closure of the peritoneum by a running suture of catgut ; 2nd. Uniting the edges of the rectus muscles by a second running suture of catgut ; 3rd. Suturing the aponeurosis in such a manner that the aponeurosis of one side is brought over, superimposed upon and sutured to that of the opposite side with silk-worm gut ; 4th. Closing the subcutaneous layer of fat with a running catgut suture ; 5th. Closing the skin with an intra-cuticular suture of catgut.

He claimed that simply bringing together of the edges of the aponeurosis is not sufficient to form a good strong union. In the "mattress" suture, the two lower surfaces are brought together and sutured through, thus narrowing the aponeurosis by nearly half an inch on each side, and so increasing its tension. The chief point about Noble's operation is that it gives a strong line of union with but slight narrowing of the aponeurosis. Before suturing the latter, it is well to separate it from the fat above and muscle below.

Malignant Endometritis.

Van Cott, J. M. "Malignant chronic endometritis."—*Inter. Med. Magazine*, April, 1897.

The writer asks and answers three questions: 1st. Can a diagnosis of this condition be made by the microscope alone? 2nd. If so, can it be made before widespread adenomatous change takes place? 3rd. If the microscope alone is incompetent, is there any combination of methods by means of which reliable results can be looked for?

He concludes that the microscope alone will not enable one to make an accurate diagnosis of this form of malignancy in the uterus. Much may be determined regarding hyperplasia, rapidity of cell proliferation and the presence or absence of adenoma, but it is utterly impossible to tell simply from the tissue removed by the curette how deeply the process has advanced into the substance of the uterus; at least, one can only have a strong suspicion that a process, which will prove fatal long before the characters are unmistakable, is present. If, in addition to the microscopic appearance, the patient gives a history of frequent metrorrhagia, unrelieved by repeated curetting, with rather a watery discharge between, you can safely make a diagnosis of malignant chronic endometritis.

As regards operation, it is better to err on the safe side and remove the uterus, if one is in doubt, as it is a greater error to leave a uterus *in situ* when it is the seat of malignant endometritis, than to remove one of which you are suspicious; yet which proves to contain nothing of a malignant character.

The condition must be comparatively rare, as the writer had only come across six cases in six years work in the pathological departments of three Philadelphia hospitals. He gives the following report of a case, but it is too incomplete to be of much value. The patient's age was about fifty. She was short, rather anæmic, and very stout with flabby tissue. There was a history of profuse metrorrhagia during the previous five years, increasing in amount and duration and with shortened intervals. Repeated curettage was followed by recurrence of the metrorrhagia and a profuse muco-serous discharge ex utero. On microscopically examining the tissue removed by the curette after two operations, an apparently simple hyperplasia of the glandular tissue was seen, but malignant hyperplastic endometritis was diagnosed and hysterectomy performed. On removal of the uterus, it was seen to be enlarged and globular with a relatively short cervix. The peritoneal coat was smooth, glistening and hyperæmic, while the organ itself felt soft and elastic. The cut section is rough and looks hyperæmic, especially near the endometrium, which is engorged with blood and hæmorrhagic in spots. The endometrium is soft, velvety and about $\frac{1}{4}$ of an inch thick. Sections examined by the microscope show neither adenoma, carcinoma or sarcoma, but a glandular hyperplasia with a tendency of the glands to grow out into the intermuscular spaces of the metrium. The matrix of the endometrium can be seen deep in the muscular wall of the uterus.

F. A. L. Lockhart.

Pathology.

UNDER THE CHARGE OF J. G. ADAMI.

The Changes Produced in the Abdominal Viscera of the Adult Woman as a Result of Corset-wearing and Pendulous Belly.

HERTZ. An abstract of Paul Hertz's "*Abnormitäten in der Lage und Form der Bauchorgane bei dem erwachsenen Weibe sine Folge des Schnürens und Hangebauches.*" Berlin, 1894. Verlag von S. Karger.

Hertz has made a very careful study of the cadavera of 50 women and the results of his examination are of great interest to all who are interested in abdominal work. They show that very great variations are produced, the mechanism of the alterations being difficult to understand in certain cases. Several points, indeed, remain quite obscure, and it seems to me that our knowledge will not be complete or satisfactory until the influence of lacing and of pendulous belly be studied under different conditions, *e.g.*, in the growing period, in the full-grown state, in relation to pregnancy and in relation to occupation. Hertz describes the changes in the different viscera as follows.

THE LIVER.

There are two chief types of alteration produced in this organ as the result of the wearing of corsets.

First Type—(*Die lange herabgeklappte Leber mit Schnürlappen, einfach oder doppelt, Sustentaculumsbilding und Nirennest.*)

In this form one or both lobes are thinned and elongated downward into the abdomen for a distance of 10, 15 or more cm. below the transverse curvature, as a kind of flap which covers the intestines or is partly covered by them. On the anterior surface is a transverse or oblique depression—the well-known corset furrow, slight or well-marked, over which the peritoneum may be thickened and fibrous as a result of perihepatitis. It is usually placed high, running from about the 8th left costal cartilage to the 10th or 11th on the right side. The upper surface of the liver is greatly diminished in area, so that the organ might be described as possessing a large anterior, a large posterior, a narrow upper surface and a thin lower margin. The outline, viewed from the front is that of a right-angled triangle, the hypothenuse being the left lower border. Sometimes it presents four corners which may be more or less like right angles; the part developed from the left lobe is generally smaller than that formed by the right. The relations of the posterior surface are complicated and differ in the right and left halves of the abdomen. That part lying to the right of the vena cava has the greatest area. It lies between the spine and the ribs immediately in front of the right kidney, which may be found in its proper place. The corset-furrow before referred to, lies anterior to this kidney, the liver substance behind the furrow being very thin, and, owing to the pressure exerted by the corset, is very close to the kidney. Above and below the kidney the liver-substance is thicker, being less compressed in these parts. Above, it forms a thick rounded mass, which lies between the ribs, the diaphragm, the vena cava and the spine. Beneath, it often forms a small mass which fits under the lower end of the kidney, apparently playing some part in supporting it. This is referred to by Hertz as the sustentaculum-formation of the right lobe of the liver. It is united to the upper part of the liver by the above-described thin portion, but frequently it is distinguished from it by a deep sulcus on the right border opposite the corset-furrow on the anterior surface. This is caused by an atrophy of the liver-substance compressed between the outer border of the kidney and the part of the lobe in front of it. This enlarged inferior mass—constriction-lobe has always been supposed, since Frerichs' time, to be due to congestion. But Hertz points out that this portion has the same structure as the rest of the liver, and that in certain other cases (to be afterwards considered) where the right kidney is displaced downwards so as to project forward under the constriction-lobe, the latter is found as a thin sharp corner, showing no thickening whatever.

As the constriction-lobe dips under the liver it touches the hepatic flexure of the colon. The latter is, as a rule, displaced downwards, and the sustentaculum rests between it and the lower end of the kidney in the form of a wedge. In this way, it is evident, a nest is built for the kidney by the liver substance, the former organ remaining in its proper place. The central portion of the posterior surface of the liver is in relation to the right half of the vertebral column ; this portion, corresponding to the quadrate lobe, also rests against the head of the pancreas. The left lobe of the liver is very variable, both in size and shape in these cases. As a rule it is elongated downwards in the form of a triangle or of a long rectangle. The corset-furrow with the accompanying perihepatitis is found on the anterior surface, extending higher than on the right lobe ; where it reaches the left margin of the liver, there is a triangular depression or a sulcus due to atrophy. The posterior relations are variable.

The tuber omentale may be somewhat flattened against the pancreas, the lower part of the lobe thinned, and resting over the lesser curve of the stomach. Or, if the stomach be displaced downwards, the lowermost part of the left lobe reaches a point between the lesser curvature and the lowermost border of the pancreas forming a mass something like the constriction-lobe described on the lower part of the right lobe, marked off from the upper portion of the lobe by a sulcus and an atrophied part of the liver-substance, due to the pressure of the organ by the corset against the upper part of the pancreas. Such a liver when removed from the body has often the appearance, in front, of a St. Andrew's cross.

When the liver is markedly elongated downwards and the left lobe is of considerable size, the interlobular fissure may be very deep, as much as 5 or 6 c.m., often. This has been stated as resulting from hypertrophy of the lower portions of the lobes. This is wrong, however. The deepening of the fissue is due to the resistance of the obliterated umbilical vein as the liver lobes are pressed downwards.

Second Type.—(Die lange herabgeklappte Leber mit Emporrücken der unteren Fläche, aber mit unvollständigem Nirennest ohne Sustentaculum.)

This form is very different from the former. It is thicker in its upper portion, than in the lower. It lies entirely or almost entirely above the transverse curvature of the abdomen and, as a rule, is broader above than below. It is curved across the spinal column. According to the width of the organ, it forms a large or small portion of a ring, which in the most marked cases extends around the stomach and spleen even as far as the left side of the spine. A sagittal section through the liver appears trapezoidal, more marked in the right than in the left lobe. The upper surface is very broad in both lobes. The anterior surface is curved in correspondence with the concavity of the anterior abdominal wall, and forms a segment of a cone, owing to the lower portion of the liver being smaller than the upper. Its lower margin lies more transverse than in normal cases. A slight constriction-furrow with perihepatitis runs across it, as a rule, just above the transverse curvature of the abdomen. Sometimes it lies close to the lower margin, a well-marked atrophied portion being visible, most pronounced adjoining the gall-bladder. The left border of the liver is sharp, the right round.

The posterior surface is described in three different divisions. The upper part of the right lobe on the right side of the vena cava lies between diaphragm, ribs and spinal column. The lower part is different from the condition described in the first type of liver. The right kidney is displaced downwards, its inferior extremity being tilted forward forming an angle with the long axis of the body, which may be as great as 45°. That part of the liver which normally is in relation to the anterior surface of this kidney projects backwards above the kidney into the space below the ribs. Below this it is moulded over the kidney and colon. The deepest part of the compression-furrow corresponds to the upper part of the surface in contact with the kidney. The central part of the posterior surface, the lobus spigelii and lobus quadratus are not flattened as in the first type of liver. The fossa for the vena cava is deep and the quadrate lobe is directed downwards and backwards. The lobus spigelii stands vertically. Sometimes the quadrate lobe comes into relation with the transverse colon. Often the latter is sunk considerably below the liver, the space between being filled up by the small intestines, though commonly the first part of the duodenum and the head of the pancreas are in relation to the quadrate lobe. The left lobe covers, as a rule, the body of the pancreas, which therefore is not visible between the stomach and lower margin of the liver. It covers a part of the stomach in the left hypochondrium and extends around so as to cover the fundus and the spleen. It meets the ribs at about the 9th costal cartilage and at this point the margin is usually atrophied. This type is common as a result of corset-wearing and is found in several variations.

A frequent variation is that in which a short more or less flattened triangular constriction lobe is found in connection with the right part of the liver, one or two finger-breadths under the ribs about the 9th or 10th costal cartilage. The left lobe shows variations also, such as may be found in the first type of liver described. One condition, however, is never found, viz., a downward elongated left lobe with a constriction-lobe. The left lobe is entirely above the transverse curvature. Sometimes it is extremely small, scarcely covering any of the stomach.

Mixed Types.—Intermediate between these two types is a form in which features of both are combined, viz., the downward extending lobe, along with changes in the posterior surface of the right lobe similar to those described in the second type. Various forms are found in which one or other type predominates. When the right kidney is displaced down so far as that its lower end presses forward the lower part of the liver, another variety is produced. Here though the kidney is in a liver-nest, the latter is incomplete, there being no sustentaculum. The forward pressure of the lower portion of the liver may be very marked in some cases. Generally the constriction-lobe of the downward elongated portion of this liver is turned somewhat towards the right. This is sometimes due to a movement of the whole organ to the right, but it may also be associated with a marked atrophy of the constriction-lobe owing to pressure against an enlarged gall-bladder. If the left lobe extends downwards as far or almost as far as the right lobe, this atrophy does not take place. When it is short, its lower margin lies directly above the constriction furrow, the quadrate lobe and the right border of the downward extended lobe being consequently liable to the greatest pressure. If in this state the gall-bladder is enlarged, the liver-substance anterior to it is compressed and atrophied. The gall-bladder may then in some cases, form a projection by itself and it may come into relation with the anterior surface of the right kidney.

It has been shown by Symington that normally the liver may be rotated to the right by a dilated stomach around an axis corresponding to the line of the vena cava. Hertz shows that the same thing can be brought about by dilatation of the left part of the colon. The amount of rotation may be determined by the relation of the umbilical fissure to the abdominal wall. Normally it lies in the middle line. Rotation may be prevented by adhesion of the liver to surrounding structures but it may be affected by alterations in the organ due to tight lacing. Thus in the cases in which the left lobe is broad and extends around the fundus of the stomach and the spleen, dilatation of the stomach or colon will not bring about a rotation, no matter what the condition of the right lobe is.

Relation to Pendulous Belly.—The changes induced by pendulous belly must be considered for they are often found in combination with those due to tight lacing. The latter is an important factor often in the production of the former.

The chief causes of lax belly are many or quickly recurring pregnancies in women who are hard-worked and are not able to take care of themselves after child-birth. Owing to the weakness in the abdominal walls, the viscera, especially the intestines, tend to sink downwards. The liver does not sink as a whole but is altered as follows, viz., its anterior surface comes to lie at a lower level and its inferior surface is directed more towards the back than normal. It also becomes somewhat flattened from before backward, corresponding to the flattening noticed externally in the upper part of the abdomen and lower part of thorax. As regards the influence of the condition on the liver found in connection with tight-lacing, it is evident that the tendency will be towards a downward extension and elongation. But where the liver is of the first type described, the features are already so well marked that they can scarcely become intensified, while in the second type of short liver without constriction-lobes, extension downwards is prevented by that part of the right lobe which projects backwards above the kidney. The intermediate forms, however, are affected by the influence of the pendulous belly, in the direction indicated, to a considerable extent.

Another relationship must also be noticed. In pendulous belly it is well-known that the intestines (and the stomach slightly) become enlarged, mainly owing to distention with air. In many cases the bowels sink downwards, but in some instances they press forward and upward, especially the transverse colon. As a result of this the liver is pressed upwards or backwards. In the case of the downwards-elongated distorted liver or in the intermediate forms with this characteristic, the distended colon lying under the constriction-lobe pushes it forward and upwards away from the kidney. This is more marked if the colon and liver be adherent. But when the gut collapses the raised portion sinks again. It thus appears that the lobe is more or less constantly altering its position. The thin portion of liver substance connecting the constriction-lobe with the rest of the organ tends to become thinner by this constant movement, forming a kind of hinge.

More rarely the transverse colon and the small intestines may lie in front of the liver, even in the case of the downward-elongated type. This condition Hertz has found, especially when the liver is soft and flabby and the vault of the abdomen is roomy. This is especially apt to occur in front of the left lobe.

For a good many years the term "Wandering or Floating Liver" has been employed in literature. It was first used in 1866, by Cantani, who believed that the whole organ had a considerable range of free movement due to the influence of pregnancy and corset-wearing. Hertz, however, denies the possibility of this, as does Landau. They hold that relaxation and stretching of the so-called coronary ligament is not possible. It has been stated by Meissner and others that sometimes this ligament is congenitally in the form of a mesentery. Hertz says that this is very doubtful, though he does not deny its possibility. He never once saw it, however, in 1000 *post-mortem* examinations. Hertz believes that the cases described as wandering liver are merely those described by him in which the organ is elongated downwards with constriction-lobes. The part below the furrow has been oftentimes mistaken for the whole liver, especially when it is very mobile in pendulous or lax belly. Landau has employed the term "Rotating Liver" to these cases, because the part below the furrow may be easily turned in the direction of the ribs.

GALL-BLADDER.

It is evident that the gall-bladder varies in position according to the various distortions found in the liver. It is important to note that dilatation of the bladder is very frequent. Hertz found it so in 24 out of 41 cases. This does not imply that escape of the bile is prevented. It is only retarded and may be expressed with the hand, though usually not without altering the position of the right lobe of the liver. The bile is often thick and slimy. Gall-stones are very infrequent. Jaundice is rarely found. When the liver is of the second type described, *i.e.*, not elongated, and the gall-bladder is not enlarged, it is not much dislocated. Its topography is, however, affected by changes in the relation of neighbouring organs. Thus the right kidney pressing forward the under surface of the liver comes, as a rule, into contact with the right part of the under surface of the gall-bladder. Also when the stomach sinks down, dragging with it the first part of the duodenum, whereby the upper part of the head of the pancreas is exposed, the neck of the gall-bladder comes into relation with this structure.

When the bladder is elongated it may project 4 or 5 cm. below the liver margin. This portion may be found in various positions. If thin and gut-like it may curve over the liver-edge. As a rule, however, it extends downwards in the neighbourhood of the second part of the duodenum and in front of the lower end of the displaced right kidney. The transverse colon is usually displaced downwards, curving below the fundus of the gall-bladder. Behind the bladder lies the meso-colon. If the pyloric end of the stomach is displaced downwards along with the first part of the duodenum, the later lies on the inner side of the bladder superficial to the second part of the duodenum. It appears then that the elongated down-sinking gall-bladder tends to press the transverse colon downwards, the pancreas and duodenum towards the left and the right kidney backwards, in the case of the second type of liver.

In the case of the first described type of liver where the lobes are extended downwards, the gall-bladder is also elongated downwards. It causes a depression in the edge of the constriction-lobe, as a result of which it becomes somewhat exposed from the front.

The cause of dilatation of the gall-bladder in cases of tight-lacing is a bending of the cystic duct owing to the forcing downwards of the bladder.

THE STOMACH.

The common feature in all displacements of the stomach as a result of tight-lacing and pendulous belly is a sinking downwards of the viscus in relation to an axis which passes through the cardiac end and through the superior flexure of the duodenum. In normal conditions, rotation of the liver affects the pylorus and first part of the duodenum. In abnormal conditions certain modifications are introduced. The left lobe has an important influence on the stomach.

The most frequent alteration in the position of the stomach is its dislocation downwards along with a movement to the left, whereby a sharp bend is formed in the viscus. The upper limb of the angle is directed from the cardiac end downwards and outwards, often reaching the side wall of the abdomen below the spleen ; the lower limb extends from the left hypochondrium transversely across the epigastrium the pylorus, as a rule, lying in the middle line or to the left, its orifice being directed to the right. This condition is found almost always along with a short left lobe of the liver which does not extend below the tranverse curvature. The stomach crosses the ribs further out than normal, at the ninth or between the ninth and tenth costal cartilages. Even when the liver is rotated to the right, the pylorus may be to the left of the middle line. It lies in most cases slightly lower than normal, and corresponds with the junction of the lower and middle third of a line joining the umbilicus and ensiform cartilage. Where the stomach crosses the ribs it is marked by a circular constriction.

The first part of the duodenum, as a rule, lies transversely, being a direct continuation of the pylorus. This is brought about by the deviation of the stomach to the left. The neighbouring structures are also affected, *e.g.*, spleen, left kidney, suprarenal body and pancreas ; they tend to move outwards also to the left. As the left lobe of the liver comes into relation with the head of the pancreas it compresses the latter. The border of the lobe is in relation to the lesser curvature of the stomach only in the epigastrium. If the lobe be very short it may not reach the pancreas. Sometimes a variety of this form of stomach dislocation is found in which the bend in the stomach forms a right angle.

In those conditions of corset-liver, in which this organ surrounds the stomach and spleen, the distension of the stomach is interfered with : this is more marked if the spleen be at all enlarged. In such cases, the stomach enlarges below the border of the liver. If there is a sharp bend in the viscus, the pyloric end undergoes this dilatation and this results in a dragging downwards of the hypochondriac portion of the stomach. If the pyloric end remains at or near its normal position the shape of the stomach is made to resemble a fish hook, that part not covered by the ribs sinking down into the mesogastrium. If the pylorus be dragged down as well, no part of the stomach may lie in the epigastrium.

In this form of distortion the pyloric opening is directed upwards and the first part of the duodenum runs upwards and to the right. Sometimes the whole body of the pancreas may be exposed by this downward displacement of the stomach, the head of the organ, only, remaining covered by the pyloric end of the stomach.

This marked condition of the stomach may also be caused by tight-lacing alone, if there be enlargement of the left lobe of the liver or spleen It is the chief cause of stomach dilatation where there is no pyloric obstruction. The same thing may be caused in men by the wearing of tight belts.

In several cases the first part of the duodenum may also be dilated, there being a sharp bend in the superior flexure, causing an obstruction to the passage of the contents of the stomach. This condition results from the dragging downward of the first part of the duodenum.

Another form of displacement occurs in the cases where the liver is of the first type described, in which the left lobe extends down as a long flap with a constriction-lobe attached. The stomach is forced from under it, the lesser curvature lying along the border of the left lobe. The pyloric end with part of the duodenum is displaced downwards in a corresponding fashion. The curve formed by the stomach depends on the size of the left lobe. The hepatico-duodenal ligament becomes stretched, mainly owing to the pressure of the liver on the head of the pancreas which is forced downwards and to the left.

This form may be combined with the last described in which a bend occurs in the left portion of the stomach ; dilation of the right portion may take place below the liver-margin.

The influence of lax or pendulous belly must now be noted. In some cases the distension of the intestines may press the stomach upwards. But the stomach itself often sinks as a result of this condition and may become considerably distended with air.

Certain authors, *e. g.*, Engel, have described another deformity in the stomach caused by tight-lacing, viz., a kind of transverse constriction furrow between the epigastric and hypochondriac portions ; it has been compared to the furrow on the anterior surface of the liver. Hertz thinks this may be merely a cadaveric phenomenon, similar to that often found in the epigastric part of the stomach, marked by greater or less contraction in the wall. It is easily made to disappear and must be distinguished from the cicatrisation due to an ulcer or from the condition found in the hour-glass condition of stomach.

SPLEEN.

This organ is rarely displaced though slight variations in its position are often found. One is specially alluded to, viz., that in which a rotation occurs so that the renal surface is turned away from the left kidney, being directed along with the gastric surface towards the front. This change is brought about either through the pressure of the stomach or of the left lobe of the liver.

PANCREAS.

This gland normally has scarcely any range of movement; it varies in shape according to the firmness of its attachments as well as to the general nutrition of the body. Slight movements may be made in all directions. The most resistance is found when it is attempted to move the gland up or down, due to the vascular connections with the aorta and vena porta. There is less resistance when the head is pushed to the left. Often that part of the gland on the left of the aorta is quite loosely attached to surrounding structures. This is especially the case when there is a roomy abdomen, lax abdominal wall, and loose retro-peritoneal connective tissue. In such a condition it is easy to understand how the gland may undergo displacement.

We may find that the body of the gland is dislocated downwards. Normally the gland runs transversely across the back wall of the abdomen in the root of the transverse mesocolon. The sinking of the left lobe of the liver, stomach and transverse colon may therefore alter the position of the body. Generally it is forced somewhat downwards, a rotation occurring whereby the upper surface is brought to the front, the anterior turned down, and the lower directed towards the back. If the pressure which is caused by the sinking down of the parts is very marked the gland becomes considerably flattened out resembling a dog's tongue. The head of the gland may not be altered in position and a fold may therefore be formed between it and the body.

Another displacement of the gland consists in the movement of the head towards the left. Normally the head of the pancreas crosses the spine and vena cava and may lie 2 or 3 c.m. to the right of the latter. It may be pushed to the left so that the vena cava is uncovered and the right border of the head be made to lie to the left of the middle line. This distortion may be produced by the pressure of a right lobe of the liver which is greatly elongated downwards, by that resulting from an enlarged gall-bladder, from both of these factors, or from the pressure of distended bowel on the right of the pancreas.

Sometimes as a result of this pressure an angle may be formed on the body of the pancreas.

Sometimes the whole gland may be displaced, being swung, as it were, around the point of attachment to the aorta; the head moves down and the body upwards. The gland may thus form with the spinal column an angle as great as 45°.

The uncovering of the pancreas as a result of the sinking of the stomach in certain cases has been already pointed out. It may also in this condition remain behind the transverse portion of the lesser curvature.

As a whole the pancreas is, in most cases, moved downwards only to a slight extent or not at all. It may, however, be displaced downwards as much as the thickness of a vertebra. The relation of the head to the second part of the duodenum is very rarely altered. Adhesions between the pancreas and the posterior surface of the stomach are common.

THE DUODENUM.

The duodenum is characterised by its considerably fixed position. It is, however, capable of being moved somewhat. Certain displacements in its first part have been alluded to in connection with the stomach.

When the stomach is forced to the left the first part of the duodenum is made to lie horizontally, continuous with the pylorus. When the latter lies to the left of the spinal column, the duodenum crosses the middle line and lies more superficially than normal, under the liver or below its lower border. Under these conditions the superior flexure of the duodenum forms a right angle. The whole duodenum is also slightly displaced downwards, seldom more than half the thickness of a vertebra. In the fish-hook condition of stomach, the first part of the duodenum is dragged downward and lies vertically, the superior flexure forming a sharp angle, somewhat obstructing the lumen of the gut. Behind it is the head of the pancreas; external to it the elongated gall-bladder; in front, the abdominal wall, and, above, the quadrate lobe of the liver. It lies alongside the second part of the duodenum, which is somewhat posterior and external to it, the hepatico-duodenal ligament being always stretched. The upper end of the head of the pancreas lies just above the superior flexure.

The second part of the duodenum, owing to its close union with the head of the pancreas, is less liable to displacement than the first part. It follows the movements of the head of the gland as already described. When the transverse colon is abnormally low the duodenum is exposed anteriorly, being covered only by the meso-colon.

The inferior flexure of the duodenum may be made to descend very low, sometimes close to the promontory, when the head of the pancreas descends. The third part of the duodenum may be considerably covered by the stomach when the latter is displaced downwards. If the displacement be very marked the third part may lie partly above the lesser curvature.

Adhesions are very frequent between the gall-bladder and duodenum, especially when the former is enlarged. These adhesions may also pass to the liver and colon. Sometimes the head of the pancreas may be completely embedded in adhesions.

THE KIDNEYS.

These organs may become displaced, often becoming movable as well. The immobility of the displaced kidney may be due to fixation by other viscera, or by inflammatory changes in the peri-nephritic tissue.

The Right Kidney—The influence of the liver distorted by tight-lacing is the main factor in displacing the right kidney. But the effect on the kidney varies according to the type of alteration produced in the liver. In the case of the first type of distorted liver, viz., that in which there is downward elongation of the lobes, Hertz has shown that the anterior surface of the kidney is covered by a portion of the lower part of the right lobe which becomes moulded under its lower end to form a sustentaculum. The kidney lies at its normal elevation or is only slightly pushed downward. It is, however, somewhat pushed backwards, the upper end however, not being separated from the supra-renal body. The corset-furrow on the liver is opposite the middle of the kidney. Often a deep fissure is formed at the right extremity of the furrow into which the kidney projects. Owing to the pushing backwards of the organ the hilus is slightly more distant than normal from the duodenum and the hepatic flexure of the colon is somewhat forced away from the lower part of the kidney by the sustentaculum.

The kidney is not, however, always found in this position with this deformity of liver. It may slip out of its bed in the liver and become movable. This may be brought about by pendulous or lax belly along with a rotation of the liver to the right, or through the forcing upwards of the latter by coils of intestines.

In that condition of distorted liver in which the backward development occurs in the right hypochondrium, and in which there is also downward elongation, the kidney is forced downward below the ribs. It may escape from its liver-bed when a sustentaculum exists, and become movable. Where there is no sustentaculum, the kidney is markedly displaced downwards below the constriction-lobe, which rests on its anterior surface and is generally very movable, the mobility being increased by the action of the corset-pressure. The range of movement may be considerable It may pass behind the root of the transverse mesocolon and press forward with its lower end that part of the peritoneum which lies between the ascending colon, mesocolon and root of the mesentery. Sometimes the kidney is forced downwards in the direction of the ilio-lumbar ligament or iliac crest, or it may slide along the psoas muscle under the peritoneum. In no case has Hertz found a mesonephron.

It is not uncommon to find the great mass of the kidney below the iliac crest or ilio-lumbar ligament, its upper end lying no higher than the space between the transverse processes of the 2nd and 3rd lumbar vertebræ, occasionally in that between the 1st and 2nd. The upper part is touched by the liver.

It is often stated that the kidney can be replaced in such cases. Hertz states that it has only been placed in the space formed behind the distorted liver, not raised to its normal level.

As regards the change in the kidney in connection with Hertz's second type of distorted liver, viz., the short form with thickened upper part and tilted forward lower end, some reference has already been made. The kidney is forced down by the pressure of the thickened liver extending backwards and outwards above it, and its lower end is pushed in by the pressure in the loin of the tightly-laced corset. The corset furrow on the liver corresponds to the upper end of the kidney. When the kidney is much pressed down it reaches the ilio-lumbar ligament over which it may slide. There is also a tendency for the long axis to change so that it forms an angle with the long axis of the body of 45° or more, as its lower end moves downward, forward and upwards. In a marked case Hertz found the upper end of the organ at the transverse process of the 5th lumbar vertebra and the lower end at the middle of the same vertebra. Usually, however, the upper end is opposite the 2nd or 3rd transverse process.

As the kidney becomes displaced in this way, the lower end meets with resistance from the colon or other viscera under pressure of the abdominal wall and corset and the organ may become somewhat bent.

Part of its anterior surface is in relation with the under surface of the liver. Posteriorly it rests against the psoas and side of the spine. The peritoneum is pressed forward by the kidney, the root of the transverse mesocolon crossing its lower end.

The kidney may become very movable, also, with this type of liver, quite apart from the influence of lax or pendulous belly. It may move downward, inward or forward. It may glide under the meso-colon and second part of the duodenum and may have all the range described in connection with the first type of liver.

Clinically the kidney is more easily recognised with the second than with the first type of liver. In the latter case it often happens that the low-hanging constriction-lobe is mistaken for the kidney.

The Left Kidney.—This organ is much less often displaced than the right one. In the cases examined by Hertz, it was movable in ten cases, displaced and non-movable in one. In no case was the upper end lower than the 12th rib, nor the lower end below the 4th lumbar vertebra. The organ lay almost always above the line of constriction. Hertz thinks that very tight-lacing tends to press it upwards. The transverse curvature was opposite the third lumbar vertebra, and the lower end of the kidney in most cases lay above this or on the same level, save where the organ was much elongated.

Hertz believes that the left kidney tends to be pressed down only when the left lobe of the liver is enlarged and the body of the pancreas displaced and forced against the upper part of the kidney. Lax or pendulous belly also plays a part in bringing about mobility of the left kidney just as in the case of the right organ, though it is secondary to the lacing. The left kidney may generally be replaced, whereas, as has been pointed out, the right one rarely can be.

THE URETERS.

In examining the ureters, Hertz never found hydronephrosis. In marked displacement of the kidney, the pelvis of the organ was irregular and indented, but the ureter was never found bent to a sharp angle.

THE COLON.

The down sinking of the transverse colon can be brought about by various conditions, among which tight-lacing is one. This portion of the bowel being behind the part of the abdomen most tightly constricted is easily forced down. The gastro-colic ligament is also elongated. These conditions may be found in women where there is no lax or pendulous belly.

When the latter condition exists as well, secondary displacements occur in the bowel. Thus it may be found in front of the liver, in the epigastrium or in front of the stomach. Or it may be low in the abdomen, the small intestines lying partly above and partly below it. Its right part is frequently prevented from sinking by adhesions to the gall-bladder. The hepatic flexure is forced downwards by the downward-elongated lobe of the liver, the sustentaculum separating the gut from the lower end of the kidney in most cases. The root of the mesocolon is also forced down. In this way the ascending colon is made very short and may be quite obliterated. The flexure is more or less covered by the liver-lobe. When there is no sustentaculum and the right kidney is forced down, the hepatic flexure may be displaced as far down as the anterior superior spine of the ilium.

In the case of the second type of liver distortion (not elongated downwards) there is little displacement of the hepatic flexure.

The splenic flexure is generally well held in position by the strong phrenico-colic ligament. In about a fifth of Hertz's cases, however, it was somewhat displaced downwards, lying over the lower end and not over the middle of the left kidney, the phrenico-colic ligament having stretched. Out of the 50 women examined, only five had fairly normal topographical relationships. Of the various displacements described, a considerable number were made out clinically.

J. C. Webster

Canadian Medical Literature.

UNDER THE CHARGE OF KENNETH CAMERON.

[The editors will be glad to receive any reprints, monographs, etc., by Canadian writers, on medical or allied subjects (including Canadian work published in other countries) for notice in this department of the JOURNAL. Such reprints should preferably be addressed to Dr. Kenneth Cameron 903 Dorchester street, Montreal.]

PERIODICALS.

MARCH, 1897.

THE CANADIAN PRACTITIONER.

Indications for operation in appendicitis—F. W. Winnett, Toronto, p. 158.
Melæna neonatorum—J. W. Smuck, Toronto, p. 168.

THE CANADIAN MEDICAL REVIEW.

Intubation—Alfred J. Horsey, Ottawa, Ont., p. 79.

CANADA MEDICAL RECORD.

Nephrolithiasis—J. B. McConnell, Montreal, p. 281.
Clinical lecture on a case of threatened puerperal eclampsia—H. L. Reddy, Montreal, p. 284.

L'UNION MÉDICALE DU CANADA.

Huit cents cas de dysménorrhée traités par l'hygiène, les médicaments, l'électricité et par diverses méthodes opératoires—A. Lapthorn Smith, Montréal, p. 129.
La carie dentaire et les affections oculaires—le Dr. Roberge, Saint-Barthélemi, p. 135.

NEW YORK MEDICAL JOURNAL (MARCH 13TH).

A portable vacuum chamber for house disinfecting by Formaldehyde—Wyatt Johnston, Montreal.

APRIL, 1897.

THE CANADIAN PRACTITIONER.

Opium in India—R. D. Rudolf, Toronto, p. 235.

THE CANADA LANCET.

Chronic suppuration of the middle ear, mastoid infection, sigmoid sinus thrombosis, septic pneumonia and death—Alfred J. Horsey, Ottawa, p. 375.
The definition and scope of orthopedic surgery—R. E. McKenzie, Toronto, p. 380.

THE CANADIAN MEDICAL REVIEW.

Croup or diphtheria—Which?—F. Oakley, Toronto, p. 119.

THE DOMINION MEDICAL MONTHLY AND ONTARIO MEDICAL JOURNAL.

Nasal polypi—Geo. Archie Stockwell, p. 305.
Rational treatment of post-partum hæmorrhage—John R. Hamilton, Port Dover, Ont., p. 311.
Chloroform anæsthesia—Dr. Duncan, Chatham, Ont., p. 314.

THE CANADIAN JOURNAL OF MEDICINE AND SURGERY.

Morbid anatomy and general pathology—T. H. Manley, New York, p. 141.

MARITIME MEDICAL NEWS.

Tubercular arthritis—Edw. Farrell, Halifax, N.S., p. 117.
On taking cold—E. A. Kirkpatrick, Halifax, N.S., p. 126.
A case of hydatidiform mole—S. J. McLennan, Sydney, N.S., p. 132.

KINGSTON MEDICAL QUARTERLY.

Clinical notes in surgical practice—R. W. Garrett, Kingston, p. 89.
Placenta prævia—D. Phalen, Kingston, p. 93.
The study of anatomy—E. W. Ryan, Kingston, p. 98.
Hydramnios and its complications—Isaac Wood, Kingston, p. 100.
Chromicized catgut ligatures—D. E. Mundell, Kingston, p. 103.
The cure of the soprano voice in the adult male—J. Connell, Kingston, p. 107.
Notes on surgical cases—W. G. Anglin, Kingston, p. 110.
Notes on blood and blood examination—W. T. Connell, Kingston, p. 114.
Notes on some medical cases—John Herald, Kingston, p. 119.

L'UNION MÉDICALE DU CANADA.

Quelques remarques sur l'usage du tabac en rapport avec la muqueuse de la bouche et des voies respiratoires—A. A. Foucher, Montreal, p. 193.

LA CLINIQUE.

Traitement abortif de la prostatite aigue—J. A. Guépin, Paris, p. 331.
Le serum antidiphtherique—A. deMartigny, Montréal, p. 334.
De l'incompatibilite—J. E. W. Lecours, Montréal, p. 336.

BOSTON MEDICAL AND SURGICAL JOURNAL (APRIL 8TH).

On the iodine test for semen—Florence's reaction—Wyatt Johnston, Montreal,

MAY, 1897.

THE CANADA LANCET.

Poisoning by illuminating gas—J. E. Graham, Toronto, p. 427.

THE CANADIAN MEDICAL REVIEW.

Notes on a case of concurrent scarlatina and enterica—Frederick Fenton, Toronto, p. 167.

L'UNION MÈDICALE DU CANADA.

Laparotomie pratiquée trois fois chez la même personne dans l'espace de seize jours—Kyste de l'ovaire, péritonite, occlusion intestinale, guérison —L. Coyteux Prévost, Ottawa, p. 257.

MEDICAL NEWS (MAY 8TH).

The doctrine of the internal secretory activity of glands in relation to the pathological anatomy of sundry morbid conditions—J. George Adami, Montreal, (abstract) p. 581.

Reviews and Notices of Books.

The Practice of Medicine. By Horatio C. Wood, A.M., M.D., and Reginald H. Fitz, A.M., M.D. J. B. Lippincott Co., Philadelphia and London; Charles Roberts, Montreal.

Of the writing of books there indeed seems to be no end, and another Practice of Medicine, recently published, attests this fact. The authors have attempted to view the practice of medicine in this volume from the "pathologic and therapeutic points of view."

Those parts dealing with therapeutics have been written by H. C. Wood, in addition to the section on nervous diseases, diseases of the muscles, acute and chronic poisoning, and the infectious diseases, except diphtheria, dysentery, tuberculosis, leprosy and syphilis. The balance of the edition is by R. H. Fitz.

As a text-book it is voluminous, having upwards of one thousand pages, and containing, as examples to medical students and young graduates, a brief formulary and a few temperature charts of the specific fevers.

The index is minute and clear, yet the page headings are not so definite as one would like. The name of the disease described on any given page is never found at the top, but its classification alone, *e.g.*, all infectious diseases are described seriatim, the page heading showing no indication whether syphilis or scarlatina is the subject discussed. This we claim is a disadvantage to one in turning up any subject.

That chapter dealing with the infectious diseases is full of interest, and contains, as text-book chapters go, the essentials in diagnosis and treatment.

That portion of this chapter on typhoid fever treats exhaustively of the clinical features of this important disease, but it contains some points which are worthy of notice. First, these authors are agreed in stating that the "rose-coloured spots" of typhoid are "not perceptibly elevated above the surface." Some adjectives may euphoniously receive the affix-ish, but, when "youngish" and "largish" are used in description, we cannot accept the choice of terms as the best. It is implied that three quarts of milk may be allowed to an adult ill with typhoid—an amount which appears excessive. Alcohol is recommended from the very "*beginning* in every case of typhoid fever."

Too often, we think, the careless application of terms is to be found, *e.g.*, in reading of the prognosis in typhoid fever cases, we find the following, "it must be remembered that so long as there is life in a typhoid fever so long," etc. Again, on another page, we notice, "a pure diphtheria may closely simulate a scarlet fever." We cannot accept the description of the *strawberry tongue.* In the description of valvular disease of the heart there is no mention made of the rhythm of thrill felt in cases of mitral stenosis and the cause of accentuated second pulmonic sound is the hypertrophied right ventricle. Under the treatment of "chronic cardiac disease, we find an interesting discussion of the use of drugs, and Wood is an advocate of the use of digitalis in the early weeks of valvular disease to induce favourable trophic changes.

Altogether the chapters on cardiac diseases are practical.

The treatment of pneumonia in robust cases by veratrum viridi is recommended and is much to be preferred to bleeding.

An important feature of this book, and one not usually found in text-books on the Practice of Medicine, is that portion of the section of diseases of the nervous system devoted to insanity.

The treatment of appendicitis and of acute peritonitis is discussed by each of the authors, each expressing his views on these important matters.

In the treatment of chronic gastritis, Wood says, "the one remedy that is useful is silver nitrate," and under the treatment of gastric ulcer we find it stated that "silver nitrate is by far the most generally useful."

We believe these authors have succeeded in a high degree in the aim of their book, "to view the practice of medicine simultaneously from the pathologic and therapeutic points," but it is our impression that the latter view is much the clearer, and that when the time is ripe for a second edition, considerable improvement in classification of symptoms, *e.g.*, under nervous diseases, definitions of diseases, and corrections of typographical errors will be made. W. F. H.

Transactions of the American Surgical Association. Volume Fourteenth. Edited by DeForest Willard, A.M., M.D., Ph.D., Recorder of the Association. Printed for the Association. William J. Dornan, Philadelphia, 1896.

The Transactions increase in size from year to year. The present volume contains the papers read before the Association, at the meeting held May 25th, 27th and 28th, 1896.

It is a handsome volume of over 700 pages.

To give a review of these papers would be an extremely difficult task, but it can be said that it is a valuable book, and contains many papers of very great interest, as well as an able and pretty full report of the meeting of the British Medical Association, held in London in 1895, by the delegate from the American Surgical Association, Dr. S. H. Weeks.

Mention may be made of the address on Intracranial Operations for the Cure of Facial Neuralgia, by the President, Louis McLane Tiffany, M.D. The different operative measures are clearly defined and illustrated and their comparative merits discussed.

Several papers were read on tuberculosis of different organs by Senn, Vander Veer, Abbé, Fowler, Willard and others.

There are no less than four papers on the ambulatory treatment of fracture.

The present volume is very well worth reading and a credit to the American Surgical Association. G. E. A.

Society Proceedings.

MONTREAL MEDICO-CHIRURGICAL SOCIETY

Stated Meeting, Feb, 26th, 1897.

J. GEORGE ADAMI, M.D., VICE-PRESIDENT, IN THE CHAIR.

Post-Typhoid Osteo-Myelitis.

Dr. G. E. ARMSTRONG exhibited this case and related the following history:

This lad was admitted to the Montreal General Hospital in Dec., 1896, suffering from acute suppurative osteo-myelitis of the tibia. As you can see by the cicatrix the greater part of the shaft of the tibia separated. I have brought these large pieces of bone which I pass around. He is said to have suffered from typhoid in July and August, 1896. The tibia first showed signs of being affected during convalescence. At the time of admission to the hospital there was an acute suppuration process going on in the tibia and his temperature as you can see from the chart was decidedly septic. In fact, notwithstanding active surgical interference it seemed at one time as if the boy would succumb to septicæmia. We have had during the past few months several cases of bone lesion with suppuration following typhoid. One case that I expected to have been here to-night was a man who had a large abscess form over the left temporal and parietal bones, the pus containing a pure culture of typhoid bacilli. The occurrence of bone lesions after typhoid, has been noticed for several years.

Murchison reported several cases. Keen in 1876, reported upwards of forty cases, Sir James Paget twenty cases, and other writers have reported cases. In 1887, Ebermaier obtained a pure culture of the typhoid bacillus from two cases of post-typhoid periostitis. Erlgi fractured a long bone in one of the lower animals and at some distance from that point injected subcutaneously a pure culture of the typhoid bacillus. Suppuration occurred at the point of fracture and the pus contained a pure culture of typhoid bacillus.

Orloff also produced suppuration in the lower animals by subcutaneous injection of pure culture of tphoid bacilli.

In many of these cases of post-typhoid bone lesion, the pus contained mixed culture. The typhoid bacillus has been found with the common colon bacillus, the pneumococcus and other pyogenic organisms.

No bone seems to be exempt, but the hands and feet are seldom affected. The tibia suffers perhaps, more frequently than any other bone.

A marked characteristic of these post-typhoid bone lesions is their chronicity. Pain is often complained of during convalescence but it may be several months before suppuration is evident.

This condition requires radical treatment. Simple incision and drainage is followed by prolonged suppuration. Free incision, thorough scraping and irrigation with antiseptic solutions give good and satisfactory results.

Dr. F. J. SHEPHERD recalled a similar case which had been under the care of the late Dr. George Ross and himself fifteen years ago. It was then called a periostitis and treated by incision but the bone had not come away until last year.

Removal of a Fibroma of the Mesentery with resection of nearly Eight Feet of Small Intestine.

Dr. F. J. SHEPHERD exhibited the patient from whom the tumour shown at the last meeting had been removed. With regard to the question of interference with nutrition raised at the time, he stated that the man had gained a pound a day.

Specimens Illustrating Necrosis of Serous Membranes.

Dr. WYATT JOHNSTON exhibited the specimens. (Will be published later).

Ruptured Tubal Pregnancy.

Dr. A. LAPTHORN SMITH exhibited the specimens and gave the following account of the case :

The patient had been married six years and had had no children. An attack of pelvic peritonitis occurred shortly after marriage resulting in more or less pain ever since, for which he had been consulted. Examination showed the uterus to be retroverted and fixed, and both tubes, especially the right, to be enlarged. After a course of local treatment she missed a period and he, suspecting tubal pregnancy, thought it important she should know what was going to happen and her husband was told that if she should fall in a faint he would know that the tube had ruptured, and to send for the doctor at once. Another attack of pelvic peritonitis supervened and while preparing her mind for the operation, one night he was sent for in a hurry and found her collapsed. After removal to hospital, laparotomy was performed, and on opening the abdomen two quarts of black clotted blood were removed. There was free hæmorrhage which was quickly controlled by ligature of the ovarian arteries. The fœtus was found free in the abdomen and was alive. The abdominal cavity was washed out with warm salt solution and left full, and a quart enema of the same solution administered. The patient had made an uninterrupted recovery and her pulse, 120 previous to operation, gradually fell to 80 afterwards.

Surgical Shock and How to Prevent It.

Dr. A. LAPTHORN SMITH in a paper on this subject said that we often heard it stated that no one knew what shock really was. He thought that this statement was not correct as we did know that shock was a vivid impression or powerful irritation of the great sympathetic nerve leading to a forcible contraction of the arterioles of the surface and throughout the body and a corresponding rush of blood into the great venous trunks especially in the abdomen, which latter he said were capable of holding all the blood in the body.

According to the above definition, a horrible sight, or a blow upon the abdomen, or concussion of the nerve centres might all cause true shock. But he did not wish to deal with these forms of shock, but with shock during surgical operation and especially during operations in the abdominal cavity. He maintained that genuine shock in these cases was rare, principally because the patient being under anæsthesia the great sympathetic was less sensible to powerful irritation. He thought that many cases which were supposed to be suffering from shock after operations, were really suffering from something else, and he endeavoured to show that the low temperature, weak and rapid pulse, and pallor of the face and the depressing of the mental and physical powers were due to one or other of the following causes: hæmorrhage out of the blood vessels, or hæmorrhage into the large veins; cooling of the body surface and prolonged anæsthesia; prolonged handling of the intestines, and prolonged stay in the bad air of a crowded operating room. He laid stress upon the importance of the Trendelenburg posture so as to prevent anæmia of the brain; and to the necessity of keeping up the pressure in the coronary artery by which alone the heart is fed, by keeping the whole arterial system fairly full either by transfusion of salt solution during the operation, or by warm salt enemata before and after the operation or by leaving the abdomen well filled with warm salt solution before closing it up. He also pointed out that much of the hæmorrhage could be prevented by finding the principal arteries and tying them before cutting them, as was done in abdominal hysterectomy which was now almost a bloodless operation. It should be remembered that a sudden hæmorrhage had much more serious results than a gradual one, as was seen in women with menorrhagia, who lost quantities of blood in a week which would surely prove fatal if lost during an hour. He made a strong plea for speed in operating; this however did not mean carelessness or neglecting the minutest detail of asepsis. What he meant was absolute silence in the operating room so that the attention of nurses and assistants should not be distracted for a moment, and also to have a large number of well trained assistants to hand the various instruments and ligatures, &c., without being asked for them. He believed that metabolism or combustion was much lessened during anæsthesia as the patient got no good air to breathe and only a very limited amount of bad air, causing a depression of the vital functions from which the patient sometimes never recovered. He suggested a mixture of ether and oxygen, so that vital combustion would not be interfered with at all. He had always observed that the most successful operators kept their patients the shortest time under anæsthesia. He also pointed out the importance of having the intestines thoroughly emptied of gas and liquid before the operation as the less they were handled, the less danger was there of shock. The Trendelenburg posture was also of great assistance in keeping the intestines out of sight. Strychnine was valuable, not only because it kept the bowels contracted and empty, but because it stimulated the heart. He also advised the use of flat zinc pans under the patient on the operating table, filled with hot water, which was renewed from time to time in order to keep up the patient's temperature; this would enable the air of the operating room to be changed, instead of keeping it close and stifling. Great care should be exercised in keeping the patient dry throughout the operation. The requirements of asepsis necessitated the use of much water and if the patient's clothing were wetted the patient might be chilled, thus contributing to shock. He had found enemata of hot salt solution introduced gently of great value in rallying patients who were apparently in a condition of shock.

Dr. JAS. BELL said that the condition known as surgical shock covered a much wider range of conditions than those described by Dr. Smith. The real surgical shock was that due to accident, so-called surgical shock post-operative, was generally due to prolonged anæsthesia, loss of blood, or chilling. He fully agreed in the need of rapid, well planned surgical operations, as an unnecessarily prolonged anæsthesia might be of serious moment to the patient.

Dr. C. J. EDGAR, of Sherbrooke, had charge of five hundred miners and the picture conveyed to his mind by the word "shock" was that of a strong robust man pale as death, and pulseless, as the result of a severe injury. Dr. Smith had told how to prevent shock, but in these cases one did not have time to do anything but treat it. He had found a large warm enema of salt solution valuable.

NEW YORK ACADEMY OF MEDICINE.

SECTION IN ORTHOPEDIC SURGERY, MEETING OF APRIL 16TH, 1897.

The Non-cutting or Unbloody Operation of Lorenz for the Reposition of Congenital Dislocation of the Hip.

This paper, by Dr. G. R. ELLIOTT, was chiefly a description of the different steps of the procedure, viz.: 1. The reduction, or bringing the head to the level of the acetabulum. 2. Re-position, or wedging the head into the acetabulum. 3. The formation of a solid acetabulum by manipulation and allowing the child to walk about with the thigh fixed by plaster of Paris at about ninety degrees of abduction. The three steps of the operation were performed under chloroform on a patient, a boy twenty-two months old, by Dr. Elliott before the members of the Section.

Dr. T. H. MYERS reported the successful performance on a similar patient, three and a half years old, of Paci's method of manipulation. viz.: forced extension, flexion and then strong traction downward, There were telescoping, lordosis and all the other signs of dislocation, and one-half inch of shortening. A good deal of force was used in order to cause inflammatory adhesion. The limb was immobilised at thirty degrees of abduction, the spica was changed several times in the following six months and the girl was then allowed to go about with a walking brace and a high shoe on the sound side. She walked with a splint walk when the apparatus was removed. The limbs remain at a nearly equal length.

Dr. W. R. TOWNSEND said it would be a great advance if these cases could be cured without a cutting operation. In his experience and observation open methods had proved unsatisfactory. The patients continue to walk lame and dislocation is liable to recur. He thought the superiority of the new methods could not be taken for granted at once. He had treated one patient by the Paci method.

Dr. R. H. SAYRE had seen but one patient in whom the hip could be distinctly reduced by Bigelow's manipulation, but he had not been allowed to operate. In this case it was necessary to abduct the limb much more than had been done in the patient treated this evening. He had not achieved brilliant success by operating. In one case after the child had been walking for six months an abscess developed in or near the joint.

Dr. R. WHITMAN had operated four times by Lorenz's method and had seen great advantage from the application of twenty-five or thirty pounds of traction for three weeks before the reduction. It acilitates bringing the head down to the level of the acetabulum which at times requires a great deal of force.

Dr. H. L. Taylor also thought these patients should have extreme forcible traction before the operation, in order to overcome more thoroughly the muscular contraction. Operative treatment had not been so far very encouraging, and he believed that this procedure held out a good prospect.

Dr. Whitman said that a point in its favour was that mothers would consent to it when they would not consent to a cutting operation. Moreover it did not confine the patient in a hospital or even in bed.

Dr. Elliott said Paci's and Lorenz's procedures were entirely distinct. Paci aimed to build up a nearthrosis in the vicinity of the joint. Frequently the head did not pass into the acetabulum. His manipulations were first flexion to the physiological limit, then abduction, then lateral rotation and slow extension, then plaster of Paris for three months and then careful walking with an apparatus. In this original procedure of Lorenz, however, if entrance of the head was not obtained, he deemed the case a failure. It was this re-position plus loading the weight of the body on the bone which made the operation. The acetabulum was there, but rudimentary. The parts immediately began to develop when the bone was replaced. The presence of the bone stimulated the growth which had been absent. The force required in traction was sometimes very great.

Achillo-Bursitis Anterior.

In a paper on this subject, Dr. S. Lloyd stated that the affection was the result of traumatism from tight shoes, shoes wearing the heel, bicycle riding, jumping and fractures ; or the result of septic, tubercular, gonorrhœal or rheumatic infection. The symptoms were pain under the tendo Achillis on standing and walking and in the plantar region, swelling on the outer end of the tendon, hyperidrosis and extensive inflammation of the surrounding tissues. In the treatment, cold and warm baths, the application of tincture of iodine and mercurial inunctions were useless. Traumatic cases required prolonged rest and pressure, and cases having their origin in infection should be treated by incision, curetting and drainage.

Dr. Whitman presented a case of this affection in a woman of thirty-five years, who was on her feet from six a.m. till eight p.m. The symptoms, of one month's duration, had been pain in the heel and in the metatarsal joints, and on pressure of the os calcis. There was slight thickening. He said these cases often become chronic and acquired weakness of the arch, or flat-foot. Rest should be enforced. Acute cases required a plaster of Paris bandage, and chronic ones a brace to arrest the function of the joint.

Dr. SAYRE had seen cases among athletes, especially hurdle racers, who, in making a leap, landed on their toes.

Dr. MYERS had personally suffered an attack of this kind after a long bicycle ride. He could only walk with ease by everting the foot. In plaster the foot should be placed at right angles to prevent the trouble from becoming chronic.

Dr. V. P. GIBNEY said that before the pathology was clear, these cases used to be called rheumatism of the heel. The region of the tendo Achillis had not been clinically explored. A counterpart is found in the advance in our knowledge which enables us to recognize scurvy in the swelling of joints in children who were called rheumatic.

THE

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BRITISH MEDICAL ASSOCIATION.

The latest accounts from England indicate that the number of members who have already taken passage is sufficient to tax the accommodation of the steamers which are to leave England about the middle of August. Hence members will do well to come out at an earlier date and make some of the trips and excursions before the meeting.

With a view of facilitating the arrangements, Dr. Adami left for England on the 22nd inst. While there, he will endeavour to arrange for further steamship accommodation for those desirous of visiting the Canadian meeting.

The various committees here are hard at work, and are accomplishing a great deal. The museum committee report themselves as well satisfied with the financial outlook of their department. The greater part of the space is taken up, and a large part of the remainder is being negotiated for. Their catalogue is to be a very unique production. No expense is to be spared to make the book as handsome and attractive as possible. As a proof of how the advertising firms look on it, already the best spaces have been taken without any solicitation. The other committees report equally satisfactory results.

THE PROGRAMME.

Members of the British Medical Association who propose to read papers at the annual meeting should at once notify the secretary of the section before which they intend to present the paper. To facilitate matters we append a list of the Canadian secretaries :

Medicine—Drs, H. A. Lafleur and W. F. Hamilton, Montreal.

Surgery—Drs. R. C. Kirkpatrick, Montreal ; Thos. Walker, St. John, N.B.

Obstetrics and Gynaecology—Drs. D. J. Evans and W. Burnett, Montreal.

Public or State Medicine—Drs. Wyatt Johnston and E. Pelletier, Montreal.

Psychology—Drs. J. V. Anglin and Geo. Villeneuve, Montreal.

Anatomy and Physiology—Drs. J. M. Elder and W. S. Morrow, Montreal.

Pathology and Bateriology—Drs. W. T. Connell, Kingston; C. F. Martin, Montreal.

Ophthalmology—Drs. W. H. Smith, Winnipeg; Jehin Prume, Montreal.

Pharmacology and Therapeutics—Drs. F. X. L. deMartigny and J. L. Spier, Montreal.

Laryngology and Otology—Drs. Chretien and H. D. Hamilton, Montreal.

Dermatology—Drs. Gordon Campbell and J. M. Jack, Montreal.

The address of the Montreal Branch of the British Medical Association is 2204 St. Catherine street.

LAVAL UNIVERSITY MEDICAL LIBRARY.

In reply to a note sent to the Medical Faculty of Laval University by the Medical Faculty of McGill University, placing their library at the disposal of any members who might desire to use it, a most cordial invitation has been given by the former "to their *confrères* of McGill" to visit the library at Laval. It is open twice a week, on Monday and Thursday evenings, from 7 to 10. Thus these two large medical libraries are accessible to the profession of this city and their treasures made available, forming a most complete library of reference, both in French and English. We congratulate the authorities of both Universities on the wise and gracious step they have taken.

NEW BOOKS, &c., RECEIVED AND NOTED.

The Year-Book of Treatment. 1897. Lea Brothers & Co., New York.

A Treatise on Cholelithiasis. By Prof. Naunyn. Translated by Dr. Garrod, New Sydenham Society. 1896.

Shortening of the Round Ligaments. By Geo. M. Edebohls, A.M., M.D. Reprinted from American Gynaecological and Obstetrical Journal. 1896.

The International Medical Annual, 1897. E. B. Treat, New York.

The Royal London Ophthalmic Reports. Vol. XIV. Part II. December, 1896.

Disorders of Indigestion in Infancy and Childhood. By W. Soltau Fenwick. H. K. Lewis, London.

On Hysterectomy. By L. Coyteux Prévôst. Reprinted from American Gynaecological and Obstetrical Journal, March, 1897.

Contribution to Traumatic Abdominal Surgery. By Thos H Manley Reprinted from Annals of Surgery, April, 1897.

On the Treatment of Fractured Shafts of Bone in Children ; Simple, Complicated and Compound. By Thos. H. Manley, M.D. Reprinted from the Journal of American Association, October 31, 1896.

Results of (Chemical) Electrolysis vs. Divulsion or Cutting in the Treatment of Urethral Strictures. By Robt. Newman, M.D Reprinted from Medical Record, March 27th, 1897.

Treatment of Uterine Fibroids. By Franklin H. Martin, M.D. Chicago. 1897.

Influenza. By William Gray, M.D. H. K. Lewis, London, 1897.

Syringomyelia. By Guy Hinsdale, A.M., M.D. P. Blakiston, Son & Co. 1897

International Clinics. Vol. I. Seventh Series. Lippincott, Philadelphia.

Genito-Urinary and Venereal Diseases. By J. Wm. White, M.D., and Edward Martin, M.D. J. B. Lippincott Company, Philadelphia.

Obituary.

WILLIAM A. AIKINS, M.D.

It is our sad duty to chronicle the death of one who, for many years, held a leading position in the medical profession in Toronto. Dr. Aikins was born in 1827, and graduated from Jefferson Medical College, Philadelphia.

For forty years he practised in Toronto, and was elected to the proud position of President of the Toronto Medical School, and later Dean of the Medical Faculty of Toronto University, which he resigned in 1893, on account of ill-health. Since then he has lived in retirement until, on May 24th, he passed away.

LAWRIE HOGG, B.A., M.D., C.M.

From London, Ont., comes the sad news of the death of Dr. Lawrie Hogg, a graduate of McGill University of the class of '95. He had successfully filled various positions in the hospitals of Montreal, and latterly had been resident gynæcologist in the Royal Victoria Hospital. Failing health obliged him to resign this position to the regret of every one. He went to his father's home at London for rest and change of scene, where he died on May 26th. His death comes as a shock to his many friends, for during his short stay among us he had made himself beloved by all. Our sympathy is with his bereaved relatives.

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The Montreal medical journal

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